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PAPERS READ BEFORE THE SOCIETY.

1918—1919.

Meeting at 22, Albemarle Street, W. 1, on November 4th, 1918, at 8 p.m.

THE PRESIDENTIAL ADDRESS.

I.—SOME JUDGMENTS OF PERCEPTION.

By G. E. Moore.

I want to raise some childishly simple questions as to what we are doing when we make judgments of a certain kind, which we all do in fact exceedingly commonly make. The kind of judgments I mean are those which we make when, with regard to something which we are seeing, we judge such things as "That is an inkstand," "That is a tablecloth," "That is a door," etc., etc.; or when, with regard to something which we are feeling with our hands, we judge such things as "This is cloth," "This is a finger," "This is a coin," etc., etc.

It is scarcely possible, I think, to exaggerate the frequency with which we make such judgments as these, nor yet the certainty with which we are able to make vast numbers of them. Any man, who is not blind, can, at almost any moment of his waking life, except when he is in the dark, make a large number of judgments of the first kind, with the greatest certainty. He has only to look about him, if he is indoors, to judge with regard to various things which he is seeing, such things as "That is a window," "That is a chair," "This is a book"; or, if he is out-of-doors, such things as "That is a house," "That is a motor-car," "That is a man," or "That is a stone," "That is a tree," "That is a cloud." And all of us,

who are not blind, do in fact constantly make such judgments, even if, as a rule, we only make them as parts of more complicated judgments. What I mean is that, when we make such judgments as "Hullo! that clock has stopped," or "This chair is more comfortable than that one," or "That man looks like a foreigner," judgments of the simpler kind with which I am concerned are, so far as I can see, actually a part of what we are judging. In judging "That clock has stopped," part of what I am actually judging is, so far as I can see, "That is a clock"; and similarly if I judge "That tree is taller than this one," my judgment actually contains the two simpler judgments "That is a tree," and "This is a tree." Perhaps most judgments which we make, of the kind I mean, are, in this way, only parts of more complicated judgments: I do not know whether this is so or not. But in any case there can be no doubt that we make them exceedingly commonly. And even a blind man, or a man in the dark, can and does, very frequently, make judgments of the second kind—judgments about things which he is feeling with his hands. All of us, for instance, at almost any moment of our waking life, whether we are in the dark or not, have only to feel certain parts of our own bodies or of our clothes, in order to make, with great certainty, such judgments as "This is a finger," "This is a nose," "This is cloth." And similarly I have only to feel in my pockets to judge, with regard to objects which I meet with there, such things as "This is a coin," "This is a pencil," "This is a pipe."

Judgments of this kind would, I think, commonly, and rightly, be taken to be judgments, the truth of which involves the existence of material things or physical objects. If I am right in judging that this is an inkstand, it follows that there is at least one inkstand in the Universe; and if there is an inkstand in the Universe, it follows that there is in it at least one material thing or physical object. This may, of course, be disputed. Berkeley, if I understand him rightly, was clearly

of opinion that there was no inconsistency in maintaining that there were in the Universe thousands of inkstands and trees and stones and stars, and that yet there was in it no such thing as matter. And perhaps the definition of matter, which he adopted, was such that there really was no inconsistency in maintaining this. Perhaps, similarly, other philosophers have sometimes adopted definitions of the expressions "material things" and "physical objects," which were such that all the judgments of this kind that we make might quite well be true, without its being true that there are in the Universe any material things whatever. Perhaps, even, there may be some justification for adopting definitions of those terms which would yield the surprising result that we may, with perfect consistency, maintain that the world is full of minerals and vegetables and animals, of all sorts of different kinds, and that yet there is not to be found in it a single material thing. I do not know whether there is or is not any utility in using the terms "material thing" or "physical object" in such a sense as this. But, whether there is or not, I cannot help thinking that there is ample justification for using them in another sense—a sense in which from the proposition that there are in the Universe such things as inkstands or fingers or clouds, it strictly follows that there are in it at least as many material things, and in which, therefore, we can *not* consistently maintain the existence of inkstands, fingers, and clouds, while denying that of material things. The kinds of judgment which I have mentioned, and thousands of others which might easily be mentioned, are obviously all of the same sort in one very important respect—a respect in which, for instance, such judgments as "This is an emotion," "This is a judgment," "This is a colour," are *not* of the same sort as they are. And it seems to me that we are certainly using the term "material thing" in a correct and useful way, if we express this important common property which they have, by saying that of each of them the same can truly be said as was said of the judgment "That is an

inkstand" : that, just as from the proposition "There is an inkstand" it follows that there is at least one material thing, so from the proposition "There is a tablecloth," it follows that there is at least one material thing; and similarly in all the other cases. We can certainly use the expression "Things *such as* inkstands, tablecloths, fingers, clouds, stars, etc.," to mean things such as these in a certain very important respect, which we all understand, though we may not be able to define it. And the term "material thing" certainly is and can be correctly used to mean simply things such as these in that respect—whatever it may be. Some term is certainly required to mean merely things such as these in that important respect; and, so far as I can see, there is no term which can be naturally used in this sense except the term "material things" and its equivalents. Thus understood, the term "material thing" certainly does stand for an important notion, which requires a name.

And, if we agree to use the term in this sense, then it is obvious that no more can be necesssary for the truth of the assertion that there are material things, than is necessary for the truth of judgments of the kind with which I propose to deal. But no more can be necessary for the truth of these judgments than is actually asserted in or logically implied by them. And if we approach the question what is necessary for the truth of the assertion that there are material things, by asking what it is that we actually assert when we make such judgments as these, certain reasons for doubting how much is necessary are, I think, brought out much more clearly, than if we approach the question in any other way. Many philosophers have told us a very great deal as to what they suppose to be involved in the existence of material things; and some, at least, among them seem to have meant by "material things" such things as inkstands, fingers and clouds. But I can think of only one type of view as to the constitution of material things, which is such that it is tolerably clear what answer those who hold it would

give to the simple question: What is it that I am judging, when I judge, as I now do, that that is an ink-stand? The type of view I mean is that to which the view that Mill suggests, when he explains what he means by saying that Matter is a Permanent Possibility of Sensation, and also the view or views which Mr. Russell seems to suggest in his "Our Knowledge of the External World," seem to belong. In the case of views of this kind, it is, I think, tolerably clear what answer those who hold them would give to *all* the questions I want to raise about judgments of the kind I have described. But it does not seem to me at all certain that any view of this type is true; and certainly many philosophers have held and do hold that all views of this type are false. But, in the case of those who do hold them to be false, I do not know, in any single case, what answer would be given to *all* the questions which I want to raise. In the case of philosophers, who do not accept any view of the Mill-Russell type, none, so far as I know, has made it clear what answer he would give to *all* my questions: some have made it clear what answer they would give to *some* of them; but many, I think, have not even made it clear what answer they would give to any. Perhaps there is some simple and satisfactory answer, which has escaped me, that such philosophers could give to all my questions; but I cannot help thinking that assumptions as to the nature of material things have too often been made, without its even occurring to those who made them to ask, what, if they were true, we could be judging when we make such judgments as these; and that, if this question had been asked, it would have become evident that those assumptions were far less certain than they appeared to be.

I do not know that there is any excuse whatever for calling *all* judgments of the kind I mean "judgments of perception." All of them are, of course, judgments *about* things which we are at the moment perceiving, since, by definition, they are judgments about things which we are seeing or feeling with our

hands; and all of them are, no doubt, also *based upon* something which we perceive about the thing in question. But the mere fact that a judgment is both about a thing which I am perceiving, and also based upon something which I perceive about that thing, does not seem to be a sufficient reason for calling it a judgment of perception; and I do not know that there is any other reason than this for calling *all* judgments of the kind I mean judgments of perception. I do not want therefore, to assert that *all* of them are so. But it seems to me quite plain that enormous numbers of them are so, in a perfectly legitimate sense. This judgment, which I now make, to the effect that *that* is a door, seems to me quite plainly to be a judgment of perception, in the simple sense that I make it because I do, in fact, see that that *is* a door, and assert in it no more than what I see; and what I see I, of course, perceive. In every case in which I judge, with regard to something which I am seeing or feeling with my hands, that it is a so-and-so, simply because I do perceive, by sight or touch, that it is in fact a thing of that kind, we can, I think, fairly say that the judgment in question is a judgment of perception. And enormous numbers of judgments of the kind I mean are, quite plainly, judgments of perception in this sense. They are not *all*, for the simple reason that some of them are mistaken. I may, for instance, judge, with regard to an animal which I see at a distance, that it is a sheep, when in fact it is a pig. And here my judgment is certainly not due to the fact that I see it to be a sheep; since I cannot possibly see a thing to be a sheep, unless it is one. It, therefore, is *not* a judgment of perception in this sense. And moreover, even where such a judgment is true, it may not always be a judgment of perception, for the reason that, whereas I only see the thing in question, the kind of thing which I judge it to be is of such a nature, that it is impossible for any one, by sight alone, to perceive anything to be of that kind. How to draw the line between judgments of this kind, which are judgments of

perception, and those which are not, I do not know. That is to say, I do not know what conditions must be fulfilled in order that I may be truly said to be *perceiving*, by sight or touch, such things as that that is a door, this is a finger, and not *merely* inferring them. Some people may no doubt think that it is very unphilosophical in me to say that we *ever* can perceive such things as these. But it seems to me that we do, in ordinary life, constantly talk of *seeing* such things, and that, when we do so, we are neither using language incorrectly, nor making any mistake about the facts—supposing something to occur which never does in fact occur. The truth seems to me to be that we are using the term "perceive" in a way which is both perfectly correct and expresses a kind of thing which constantly does occur, only that some philosophers have not recognised that this is a correct usage of the term and have not been able to define it. I am not, therefore, afraid to say that I do now perceive that that is a door, and that that is a finger. Only, of course, when I say that I do, I do not mean to assert that part of what I "perceive," when I "perceive" these things, may not be something which, in an important sense, is known to me only by inference. It would be very rash to assert that "perception," in this sense of the word, entirely excludes inference. All that seems to me certain is that there is an important and useful sense of the word "perception," which is such that the amount and kind of inference, if inference there be, which is involved in my present perception, that that is a door, is no bar to the truth of the assertion that I do perceive that it is one. Vast numbers, then, of the kind of judgments with which I propose to deal seem to me to be, in an important and legitimate sense, judgments of perception; although I am not prepared to define, any further than I have done, what that sense is. And though it is true that the questions which I shall raise apply just as much to those of them which are not judgments of perception as to those which are, it is, of course, also true that they apply just as much to those which are as to those which are not; so

that I shall be really dealing with a large and important class among judgments of perception.

It is true that, if certain views which, if I understand them rightly, some philosophers have seriously entertained, were true ones, it would be quite impossible that any of them should be judgments of perception. For some philosophers seem to me to have denied that we ever do in fact know such things as these, and others not only that we ever know them but also that they are ever true. And, if, in fact, I never do know such a thing, or if it is never true, it will, of course, follow that I never perceive such a thing; since I certainly cannot, in this sense, perceive anything whatever, unless I both know it and it is true. But it seems to me a sufficient refutation of such views as these, simply to point to cases in which we do know such things. This, after all, you know, really is a finger: there is no doubt about it: I know it, and you all know it. And I think we may safely challenge any philosopher to bring forward any argument in favour either of the proposition that we do not know it, or of the proposition that it is not true, which does not, at some point, rest upon some premiss which is, beyond comparison, less certain than is the proposition which it is designed to attack. The questions whether we do ever know such things as these, and whether there are any material things, seem to me, therefore, to be questions which there is no need to take seriously: they are questions which it is quite easy to answer, with certainty, in the affirmative. What does, I think, need to be taken seriously, and what is really dubious, is not the question whether this is a finger, or whether I know that it is, but the question *what*, in certain respects, I am knowing, when I know that it is. And this is the question to which I will now address myself.

To begin with there is one thing which seems to me to be very certain indeed about such judgments. It is unfortunately a thing which I do not know how properly to express. There seem to me to be objections to every way of expressing it which I

can think of. But I hope I may be able to make my meaning clear, in spite of the inadequacy of my expression. The thing I mean is a thing which may to some people seem so obvious as to be scarcely worth saying. But I cannot help thinking that it is not always clearly recognised, and even that some philosophers, to judge from what they say, might perhaps dispute it. It seems to me to be an assumption which is silently made in many treatments of the subject, and, as I say, it seems to me to be very certain indeed. But I think it is at all events worth while to try to make the assumption explicit, in case it should be disputed. If it really is not true, then the other questions to which I shall go on, and which seem to me really dubious and difficult, do not, I think, arise at all.

I will try to express this fundamental assumption, which seems to me so very certain, by saying it is the assumption that, in all cases in which I make a judgment of this sort, I have no difficulty whatever in picking out a thing, which is, quite plainly, in a sense in which nothing else is, *the* thing about which I am making my judgment; and that yet, though this thing is *the* thing about which I am judging, I am, quite certainly, *not*, in general, judging with regard to it, that *it* is a thing of that kind for which the term, which seems to express the predicate of my judgment, is a name. Thus, when I judge, as now, that That is an inkstand, I have no difficulty whatever in picking out, from what, if you like, you can call my total field of presentation at the moment, an object, which is undoubtedly, in a sense in which nothing else is, *the* object about which I am making this judgment; and yet it seems to me quite certain that of *this* object I am not judging that it is a whole inkstand. And similarly when I judge, with regard to something which I am feeling in my pocket, "This is a coin," I have no difficulty in picking out, from my field of presentation, an object, which is undoubtedly *the* object with which my judgment is concerned; and yet I am certainly not judging with regard to this object that it is a whole coin. I say that

always, when I make such a judgment, I can pick out *the* one, among the objects presented to me at the time, about which I am making it; but I have only said that *in general* I am not judging with regard to this object that it is a thing of the kind, for which the term, which seems to express the predicate of my judgment, is a name. And I have limited my second proposition in this way, because there are cases, in which it does not, at first sight, seem quite so certain that I am not doing this, as in the two instances I have just given. When, for instance, I judge with regard to something, which I am seeing, "This is a soap-bubble," or "This is a drop of water," or even when I judge "This is a spot of ink," it may not seem quite so plain, that I may not be judging, with regard to the very object presented to me, that it is, itself, a whole soap-bubble, a whole drop of water, or a whole spot of ink, as it always is, in the case of an inkstand, or a coin, that I never take the presented object, about which I am judging, to be a whole inkstand, or a whole coin. The sort of reason why I say this will, of course, be obvious to any one, and it is obviously of a childish order. But I cannot say that it seems to me quite obvious that in such a case I am not judging of the presented object that it is a whole drop of water, in the way in which it does seem to be obvious that I am not judging of *this* presented object that it is an inkstand. That is why I limit myself to saying that, *in general*, when I judge "That is a so-and-so" I am not judging with regard to the presented object, about which my judgment is, that *it* is a thing of the kind in question. As much as this seems to me to be a thing which any child can see. Nobody will suppose, for a moment, that when he judges such things as "This is a sofa," or "This is a tree," he is judging, with regard to the presented object, about which his judgment plainly is, that it is a whole sofa or a whole tree: he can, at most, suppose that he is judging it to be a part of the surface of a sofa or a part of the surface of a tree. And certainly in the case of most judgments of this kind which we make, whether

in the case of all or not, this is plainly the case: we are not judging, with regard to the presented object about which our judgment plainly is, that it is a thing of the kind, for which the term which appears to express the predicate of our judgment, is a name. And that this should be true of *most* judgments of this kind, whether of all or not, is quite sufficient for my purpose.

This much, then, seems to me to be very certain indeed. But I will try to make clearer exactly what I mean by it, by mentioning a ground, on which I imagine it might perhaps be disputed.

The object of which I have spoken as *the* object, about which, in each particular case, such a judgment as this always is a judgment, is, of course, always an object of the kind which some philosophers would call a sensation, and others would call a sense-datum. Whether all philosophers, when they talk of sensations, mean to include among them such objects as these, I do not know. Some, who have given a great deal of attention to the subject, and for whom I have a great respect, talk of sensations in such a way, that I cannot be sure what they are talking about at all or whether there are such things. But many, I think, undoubtedly do mean to include such subjects as these. No doubt, in general, when they call them sensations, they mean to attribute to them properties, which it seems to me extremely doubtful whether they possess. And perhaps even those who call them sense-data, may, in part, be attributing to them properties which it may be doubtful whether they possess. If we want to define a sensation or a sense-datum, in a manner which will leave it not open to doubt what sort of things we are talking of, and that there are such things, I do not know that we can do it better than by saying that sense-data are the sort of things, *about* which such judgments as these always seem to be made—the sort of things which seem to be the real or ultimate subjects of all such judgments. Such a way of defining how the term "sense-

datum" is used, may not seem very satisfactory; but I am inclined to think it may be as satisfactory as any which can be found. And it is certainly calculated to obviate some misunderstandings which may arise; since everybody can see, I think, what the thing is which I am describing as *the* thing about which he is making his judgment, when he judges "That is an inkstand," and that there is such a thing, even if he does not agree that this description applies to it.

I can, in fact, imagine that some of those who would call this thing a sensation would deny that my judgment is *about* it at all. It would sometimes be spoken of as the sensation which mediates my perception of this inkstand, in this instance. And I can imagine that some of those who would so speak of it might be inclined to say that when I judge "This is an inkstand," my judgment is about this inkstand which I perceive, and not, in any sense at all, about the sensation which mediates my perception of it. They may perhaps imagine that the sensation mediates my perception of the inkstand only in the sense that it brings the inkstand before my mind in such a way that, once it is before my mind, I can make a judgment about it, which is *not* a judgment about the mediating sensation at all; and that such a judgment is the one I am actually expressing when I say "This is an inkstand." Such a view, if it is held, seems to me to be quite certainly false, and is what I have intended to deny. And perhaps I can put most clearly the reason why it seems to me false, by saying that, if (which may be doubted) there is anything which is this inkstand, that thing is certainly not given to me independently of this sense-datum, in such a sense that I can possibly make a judgment about it which is *not* a judgment about this sense-datum. I am not, of course, denying that I do perceive this inkstand, and that my judgment is, in a sense, a judgment about it. Both these things seem to me to be quite obviously true. I am only maintaining that my judgment is *also*, in another sense, a judgment about this sense-datum which mediates my perception

of the inkstand. Those who say that this sense-datum does mediate my perception of the inkstand, would, of course, admit that my perception of the inkstand is, in a sense, dependent upon the sense-datum; that it is dependent is implied in the mere statement that it is mediated by it. But it might be maintained that it is dependent on it only in the sense in which, when the idea of one object is called up in my mind, through association, by the idea of another, the idea which is called up is dependent on the idea which calls it up. What I wish to maintain, and what seems to me to be quite certainly true, is that my perception of this inkstand is dependent on this sense-datum, in a quite different and far more intimate sense than this. It is dependent on it in the sense that, if there is anything which is this inkstand, then, in perceiving that thing, I am knowing it *only* as *the* thing which stands in a certain relation to this sense-datum. When the idea of one object is called up in my mind by the idea of another, I do not know the second object *only* as *the* thing which has a certain relation to the first: on the contrary, I can make a judgment about the second object, which is not a judgment about the first. And similarly in the case of two sense-data which are presented to me simultaneously, I do not know the one *only* as the thing which has a certain relation to the other. But in the case of this sense-datum and this inkstand the case seems to me to be plainly quite different. If there be a thing which is this inkstand at all, it is certainly *only* known to me as *the* thing which stands in a certain relation to this sense-datum. It is not given to me, in the sense in which this sense-datum is given. If there be such a thing at all, it is quite certainly only known to me by description, in the sense in which Mr. Russell uses that phrase; and the description by which it is known is that of being *the* thing which stands to this sense-datum in a certain relation. That is to say, when I make such a judgment as "This inkstand is a good big one"; what I am really judging is: "There is a thing which stands to *this* in a

certain relation, and which is an inkstand, and that thing is a good big one"—where "*this*" stands for this presented object. I am referring to or identifying the thing which is this inkstand, if there be such a thing at all, only as the thing which stands to this sense-datum in a certain relation; and hence my judgment, though in one sense it may be said to be a judgment about the inkstand, is quite certainly also, in another sense, a judgment about this sense-datum. This seems to me so clear, that I wonder how anyone can deny it; and perhaps nobody would. But I cannot help thinking that it is not clear to everybody, partly because, so far as I can make out, nobody before Mr. Russell had pointed out the extreme difference there is between a judgment about a thing known only by description to the individual who makes the judgment, and a judgment about a thing not known to him only in this way; and partly because so many people seem still utterly to have failed to understand what the distinction is which he expresses in this way. I will try to make the point clear, in a slightly different way. Suppose I am seeing two coins, lying side by side, and am not perceiving them in any other way except by sight. It will be plain to everybody, I think, that, when I identify the one as "This one" and the other as "That one," I identify them only by reference to the two visual presented objects, which correspond respectively to the one and to the other. But what may not, I think, be realised, is that the sense in which I identify them by reference to the corresponding sense-data, is one which involves that every judgment which I make about the one is a judgment about the sense-datum which corresponds to it, and every judgment I make about the other, a judgment about the sense-datum which corresponds to *it*: I simply cannot make a judgment about either, which is not a judgment about the corresponding sense-datum. But if the two coins were given to me, in the sense in which the two sense-data are, this would certainly not be the case. I can identify and distinguish the two sense-data *directly*, this as this one, and that as that

one: I do not need to identify either as *the* thing which has this relation to this other thing. But I certainly cannot thus directly identify the two coins. I have not four things presented to me (1) *this* sense-datum, (2) *that* sense-datum, (3) *this* coin, and (4) *that* coin, but two only—*this* sense-datum and *that* sense-datum. When, therefore, I judge "*This* is a coin," my judgment is certainly a judgment about the one sense-datum, and when I judge "And *that* is also a coin," it is certainly a judgment about the other. Only, in spite of what my language might seem to imply, I am certainly not judging either of the one sense-datum that it is a whole coin, nor yet of the other that it is one.

This, then, seems to me fundamentally certain about judgments of this kind. Whenever we make such a judgment we can easily pick out an object (whether we call it a sensation or a sense-datum or not), which is, in an easily intelligible sense, *the* object which is the real or ultimate subject of our judgment; and yet, in many cases at all events, what we are judging with regard to this object is certainly not that it is an object of the kind, for which the term which appears to express the predicate of our judgment, is a name.

But if this be so, what is it that I am judging, in all such cases, about the presented object, which is the real or ultimate subject of my judgment? It is at this point that we come to questions which seem to me to be really uncertain and difficult to answer.

To begin with, there is one answer which is naturally suggested by the reason I have given for saying that, in this case, it is quite obvious that I am not judging, with regard to this presented object, that *it* is an inkstand, whereas it is not in the same way, quite obvious that, in making such a judgment as "This is a soap-bubble" or "This is a drop of water," I may not be judging, of the object about which my judgment is, that that very object really is a soap-bubble or a drop of water. The reason I gave is that it is quite obvious that I do

not take this presented object to be a *whole* inkstand: that, at most, I only take it to be part of the surface of an inkstand. And this reason naturally suggests that the true answer to our question may be that what I am judging of the presented object is just that it is a part of the surface of an inkstand. This answer seems to me to be obviously on quite a different level from the suggestion that I am judging it really to be an inkstand. It is not childishly obvious that I am not judging it to be part of the surface of an inkstand, as it is that I am not judging it to be an inkstand—a whole one.

On this view, when I say such things as "That is an inkstand," "That is a door," "This is a coin," these expressions would really only be a loose way of saying "That is part of the surface of an inkstand," "That is part of the surface of a door," "This is part of the surface of a coin." And there would, I think, plainly be nothing surprising in the fact that we should use language thus loosely. What, at first sight, appears to be a paradox, namely that, whereas I appear to be asserting of a given thing that it is of a certain kind, I am not really asserting of the thing in question that it is of that kind at all, would be susceptible of an easy explanation. And moreover, if this view were true, it would offer an excellent illustration of the difference between a thing known only by description and a thing not so known, and would show how entirely free from mystery that distinction is. On this view, when I judge "That inkstand is a good big one" I shall in effect be judging: "There is one and only one inkstand of which *this* is part of the surface, and the inkstand of which this is true is a good big one." It would be quite clear that the part of the surface of the inkstand was given to me in a sense in which the whole was not, just as it is in fact clear that I do now "*see*" this part of the surface of this inkstand, in a sense in which I do *not* "see" the whole; and that my judgment, while it is, in fact, *about* both the whole inkstand, and also *about* one particular part of its surface, is *about* them in two entirely different senses.

This view is one, which it is, at first sight, I think, very natural to suppose to be true. But before giving the reasons, why, nevertheless, it seems to me extremely doubtful, I think it is desirable to try to explain more precisely what I mean by it. The word "part" is one which is often used extremely vaguely in philosophy; and I can imagine that some people would be willing to assent to the proposition that this sense-datum really is, in some sense or other, a "part" of this inkstand, and that what I am judging with regard to it, when I judge "This is an inkstand," is, in effect, "This is an inkstand, of which *this* is a part," who would be far from allowing that this can possibly be what I am judging, when once they understand what the sense is in which I am here using the word "part." What this sense is, I am quite unable to define; but I hope I may be able to make my meaning sufficiently clear, by giving instances of things which are undoubtedly "parts" of other things in the sense in question. There is, it seems to me, a sense of the word "part," in which we all constantly use the word with perfect precision, and which, therefore, we all understand very well, however little we may be able to define it. It is the sense in which the trunk of any tree is undoubtedly a part of that tree; in which this finger of mine is undoubtedly a part of my hand, and my hand a part of my body. This is a sense in which every part of a material thing or physical object is itself a material thing or physical object; and it is, so far as I can see, the only proper sense in which a material thing can be said to have parts. The view which I wish to discuss is the view that I am judging this presented object to be a part of an inkstand, in this sense. And the nature of the view can perhaps be brought out more clearly, by mentioning one important corollary which would follow from it. I am, of course, at this moment, seeing many parts of the surface of this inkstand. But all these parts, except one, are, in fact, themselves parts of that one. That one is the one of which we should naturally speak as "*the* part of the surface

that I am now seeing" or as "*this* part of the surface of this inkstand." There is only one part of the surface of this inkstand, which does thus contain, as parts, all the other parts that I am now seeing. And, if it were true that I am judging this presented object to be a part of the surface of an inkstand at all, in the sense I mean, it would follow that this presented object must, if my judgment "This is an inkstand" be true (as it certainly is), be identical with this part, which contains all the other parts which I am seeing: since there is plainly no other part with which it could possibly be identified. That is to say, if I am really judging of this presented object that it is part of the surface of an inkstand, in the sense I mean, it must be the case that everything which is true of what I should call "this part of the surface of this inkstand" is, in fact, true of this presented object.

This view, therefore, that what we are judging of the ultimate subject of our judgment, when we judge "This is a so-and-so," is, in general, merely that the subject in question is a *part* of a thing of the kind in question, can, I think, be most clearly discussed, by asking whether, in this case, this presented object can really be identical with this part of the surface of this inkstand. If it can't, then most certainly I am not judging of it that it is a part of the surface of an inkstand at all. For my judgment, whatever it is, is true. And yet, if this presented object is not identical with this part of the surface of this inkstand, it certainly is not a part of an inkstand at all; since there is no other part, either of this inkstand or of any other, with which it could possibly be supposed to be identical.

Can we, then, hold that this sense-datum really is identical with this part of the surface of this inkstand? That everything which is true of the one is true of the other?

An enormous number of very familiar arguments have been used by various philosophers, which, if they were sound, would show that we can not. Some of these arguments seem to me to be quite clearly not sound—all, for instance, which rest either

on the assumption that this sense-datum can only exist so long as it is perceived, or on the assumption that it can only exist so long as it is perceived *by me*. Of others I suspect that they may have some force, though I am quite unable to see that they have any. Such, for instance, are all those which assume either that this sense-datum is a sensation or feeling of mine, in a sense which includes the assertion that it is dependent on my mind in the very same sense in which my perception of it obviously is so; or that it is causally dependent on my body in the sense in which my perception of it admittedly is so. But others do seem to me to have great force. I will, however, confine myself to trying to state one, which seems to me to have as much as any. It will be found that this one involves an assumption, which does seem to me to have great force, but which yet seems to me to be doubtful. So far as I know, all good arguments against the view that this sense-datum really is identical with this part of the surface of the inkstand, do involve this same assumption, and have no more force than it has. But in this, of course, I may be wrong. Perhaps some one will be able to point out an argument, which is obviously quite independent of it, and which yet has force.

The argument I mean involves considerations which are exceedingly familiar, so familiar that I am afraid every one may be sick of hearing them alluded to. But, in spite of this fact, it seems to me not quite easy to put it quite precisely, in a way which will distinguish it clearly from other arguments involving the same familiar considerations, but which do not seem to me to be equally cogent. I want, therefore, to try to put it with a degree of precision, which will prevent irrelevant objections from being made to it—objections which would, I think, be relevant against some of these other arguments, but are not, I think, relevant against it.

The fact is that we all, exceedingly commonly, when, at each of two times, separated by a longer or shorter interval, we see a part of the surface of a material thing, in the sense in which I

am now seeing this part of the surface of this inkstand, or when at one time we see such a surface and at another perceive one by touch, make, on the second occasion, the judgment "*This* part of a surface is the *same* part of the surface of the same thing, as that which I was seeing (or perceiving by touch) just now." How commonly we all do this can scarcely be exaggerated. I look at this inkstand, and then I look again, and on the second occasion I judge "This part of the surface of this inkstand is the same as, or at least contains a part which is the same as a part of, the part of its surface which I was seeing just now." Or I look at this finger and then I touch it, and I judge, on the second occasion, "This part of the surface of this finger is the same as one of those I was seeing just now." We all thus constantly identify a part of a surface of a material thing which we are perceiving at one time with a part which we *were* perceiving at another.

Now, when we do this—when we judge "This is the *same* part of the same thing as I was seeing or touching just now," we, of course, do not mean to exclude the possibility that the part in question may have changed during the interval; that it is really different, on the second occasion, either in shape or size or quality, or in all three, from what it was on the first. That is to say, the sense of sameness which we are here concerned with is one which clearly does not exclude change. We may even be prepared to assert, on general grounds, in all such cases, that the surface in question certainly must have changed. But nevertheless there is a great difference in one respect, between two kinds of such cases, both of which occur exceedingly commonly. If I watch somebody blowing air into a child's balloon, it constantly happens, at certain stages in the process, that I judge with regard to the part of the surface which I am seeing at that stage, not only that it *is* larger than it was at an earlier stage, but that it is *perceptibly* larger. Or, if I pull the face of an india-rubber doll, I may judge at a certain stage in the process that the patch of red colour on its cheek

not only is different in shape from what it was at the beginning, but is *perceptibly* so: it may, for instance, be a perceptibly flatter ellipse than it was to start with. Or, if I watch a person blushing, I may judge at a certain stage that a certain part of the surface of his face not only is different in colour from what it was, when I saw it before he began to blush, but is *perceptibly* so—perceptibly redder. In enormous numbers of cases we do thus judge of a surface seen at a given time that it is thus *perceptibly* different in size, or in shape, or in colour, from what it was when we saw it before. But cases are at least equally numerous in which, though we might, on general grounds be prepared to assert that it *must* have changed in some respect, we should not be prepared to assert that it had, in any respect whatever, changed *perceptibly*. Of this part of this surface of this inkstand, for instance, I am certainly not prepared to assert that it is now perceptibly different in any respect from what it was when I saw it just now. And similar cases are so numerous that I need not give further instances. We can, therefore, divide cases, in which we judge, of a part of a surface which we are seeing, "This is the same part of the surface of the same material thing as the one I saw just now," into cases where we should also judge "But it is perceptibly different from what it was then," and cases in which, even though we might assert "It *must* be different," we are certainly not prepared to assert that it is *perceptibly* so.

But now let us consider the cases in which we are not prepared to assert that the surface in question has changed perceptibly. The strange fact, from which the argument I mean is drawn, is that, in a very large number of such cases, it seems as if it were unmistakably true that the presented object, about which we are making our judgment when we talk of "This surface" at the later time, *is* perceptibly different, from that about which we are making it when we talk of the surface I saw just now. If, at the later time, I am at a sufficiently greater distance from the surface, the presented

object which corresponds to it at the time seems to be perceptibly smaller, than the one which corresponded to it before. If I am looking at it from a sufficiently oblique angle, the later presented object often seems to be perceptibly different in shape—a perceptibly flatter ellipse, for instance. If I am looking at it, with blue spectacles on, when formerly I had none, the later presented object seems to be perceptibly different in colour from the earlier one. If I am perceiving it by touch alone, whereas formerly I was perceiving it by sight alone, the later presented object seems to be perceptibly different from the earlier, in respect of the fact that it is not coloured at all, whereas the earlier was, and that, on the other hand, it has certain tactual qualities, which the earlier had not got. All this seems to be as plain as it can be, and yet it makes absolutely no difference to the fact that of the surface in question we are *not* prepared to judge that it is perceptibly different from what it was. Sometimes, of course, where there seems to be no doubt that the later presented object is perceptibly different from the earlier, we may not notice that it is so. But even where we do notice the apparent difference, we do still continue to judge of the surface in question: This surface is not, so far as I can tell with certainty by perception, in any way different from what it was when I saw it or touched it just now; I am *not* prepared to assert that it has changed perceptibly. It seems, therefore, to be absolutely impossible that the surface seen at the later time should be identical with the object presented then, and the surface seen at the earlier identical with the object presented then, for the simple reason that, whereas with regard to the later seen surface I am not prepared to judge that it is in any way perceptibly different from that seen earlier, it seems that with regard to the later sense-datum I cannot fail to judge that it *is* perceptibly different from the earlier one: the fact that they are perceptibly different simply stares me in the face. It seems, in short, that when, in such a case, I judge: "This surface is not, so far as I

can tell, perceptibly different from the one I saw just now," I cannot possibly be judging of the presented object "*This* is not, so far as I can tell, perceptibly different from that object which was presented to me just now," for the simple reason that I *can* tell, as certainly, almost, as I can tell anything, that it is perceptibly different.

That is the argument, as well as I can put it, for saying that this presented object is *not* identical with this part of the surface of this inkstand; and that, therefore, when I judge "This is part of the surface of an inkstand," I am not judging of this presented object, which nevertheless is the ultimate subject of my judgment, that *it* is part of the surface of an inkstand. And this argument does seem to me to be a very powerful one.

But nevertheless it does not seem to me to be quite conclusive, because it rests on an assumption, which, though it seems to me to have great force, does not seem to me quite certain. The assumption I mean is the assumption that, in such cases as those I have spoken of, the later presented object really is perceptibly different from the earlier. This assumption has, if I am not mistaken, seemed to many philosophers to be quite unquestionable; they have never even thought of questioning it; and I own that it used to be so with me. And I am still not sure that I may not be talking sheer nonsense in suggesting that it can be questioned. But, if I am, I'm no longer able to see that I am. What now seems to me to be possible is that the sense-datum which corresponds to a tree, which I am seeing, when I am a mile off, may not really be perceived to *be* smaller than the one, which corresponds to the same tree, when I see it from a distance of only a hundred yards, but that it is only perceived to *seem* smaller; that the sense-datum which corresponds to a penny, which I am seeing obliquely, is not really perceived to *be* different in shape from that which corresponded to the penny, when I was straight in front of it, but is only perceived to *seem* different—that all

that is perceived is that the one *seems* elliptical and the other circular; that the sense-datum presented to me when I have the blue spectacles on is not perceived to *be* different in colour from the one presented to me when I have not, but only to *seem* so; and finally that the sense-datum presented when I touch this finger is not perceived to *be* different in any way from that presented when I see it, but only to *seem* so—that I do not perceive the one to be coloured and the other not to be so, but only that the one *seems* coloured and the other not. If such a view is to be possible, we shall have, of course, to maintain that the kind of experience which I have expressed by saying one *seems* different from the other—"*seems* circular," "*seems* blue," "*seems* coloured," and so on—involves an ultimate, not further analysable, kind of psychological relation, not to be identified either with that involved in being "perceived" to be so and so, or with that involved in being "judged" to be so and so; since a presented object might, in this sense, *seem* to be elliptical, *seem* to be blue, etc., when it is neither perceived to be so, nor judged to be so. But there seems to me to be no reason why there should not be such an ultimate relation. The great objection to such a view seems to me to be the difficulty of believing that I don't actually perceive this sense-datum to *be* red, for instance, and that other to *be* elliptical; that I only perceive, in many cases, that it *seems* so. I cannot, however, now persuade myself that it is quite clear that I do perceive it to *be* so. And, if I don't, then it seems really possible that this presented object really is identical with this part of the surface of this inkstand; since, when I judge, as in the cases supposed, that the surface in question is *not*, so far as I can tell, perceptibly different from what it was, I might really be judging of the two sense-data that they also were not, so far as I can tell, perceptibly different, the only difference between the two that *is* perceptible, being that the one *seems* to be of a certain size, shape or colour, and the other to be of a different and incompatible

size, shape or colour. Of course, in those cases, as in that of the balloon being blown up, where I "perceive" that the surface has changed, *e.g.* in size, it would have to be admitted that I do perceive of the two sense-data not merely that they *seem* different in size, but that they *are* so. But I think it would be possible to maintain that the sense in which, in these cases, I "perceive" them to *be* different, is a different one from that in which, both in these and in the others, I perceive them to *seem* so.

Possibly in making this suggestion that sense-data, in cases where most philosophers have assumed unhesitatingly that they are *perceived* to be different, are only really perceived to *seem* different, I am, as I said, talking sheer nonsense, though I cannot, at the moment, see that I am. And possibly, even if this suggestion itself is not nonsense, even if it is true, there may be other fatal objections to the view that this presented object really is identical with this part of the surface of this inkstand. But what seems to me certain is that, unless this suggestion is true, then this presented object is certainly *not* identical with this part of the surface of this inkstand. And since it is doubtful whether it is not nonsense, and still more doubtful whether it is true, it must, I think, be admitted to be highly doubtful whether the two *are* identical. But, if they are not identical, then what I am judging with regard to this presented object, when I judge "This is an inkstand," is certainly *not* that it is itself part of the surface of an inkstand; and hence, it is worth while to inquire further, what, if I am not judging this, I *can* be judging with regard to it.

And here, I think, the first natural suggestion to make is that just as, when I talk of "this inkstand," what I seem really to mean is "*the* inkstand of which *this* is part of the surface," so that the inkstand is only known to me by description as the inkstand of which this material surface is part of the surface, so again when I talk of "this material surface," what I really mean is "*the* material surface to which

this (presented object) has a certain relation," so that this surface is, in its turn, only known to me by description as *the* surface which has a certain relation to this presented object. If that were so, then what I should be judging of this presented object, when I judge "This is part of the surface of an inkstand," would be not that it is itself such a part, but that *the* thing which stands to it in a certain relation is such a part: in short, what I should be judging with regard to *it*, would be "There's one thing, and one only which stands to *this* in *this* relation, and the thing which does so is part of the surface of an inkstand."

But if we are to adopt the view that something of this sort is what we are judging, there occurs at once the pressing question: What on earth can the relation be with regard to which we are judging, that one and only one thing stands in it to this presented object? And this is a question to which, so far as I know, none of those philosophers, who *both* hold (as many do) that this presented object is *not* identical with this part of the surface of this inkstand, *and* also that there really is something of which it could be truly predicated that it is this part of the surface of this inkstand (that is to say, who reject all views of the Mill–Russell type), have given anything like a clear answer. It does not seem to have occurred to them that it requires an answer, chiefly, I think, because it has not occurred to them to ask what we can be judging when we make judgments of this sort. There are only two answers, that I can think of, which might be suggested with any plausibility.

Many philosophers, who take the view that the presented objects about which we make these judgments are sensations of ours, and some even who do not, are in the habit of talking of "*the* causes" of these objects as if we knew, in the case of each, that it had one and only one cause; and many of them seem to think that this part of the surface of this inkstand could be correctly described as *the* cause of this presented object. They suggest, therefore, the view that what I am judging in

this case might be: "This presented object has one and only one cause, and that cause is part of the surface of an inkstand." It seems to me quite obvious that *this* view, at all events, is utterly untenable. I do not believe for a moment, nor does any one, and certainly therefore do not judge, that this presented object has *only* one cause: I believe that it has a whole series of different causes. I do, in fact, believe that this part of the surface of this inkstand is *one* among the causes of my perception of this presented object: that seems to me to be a very well established scientific proposition. And I am prepared to admit that there *may* be good reasons for thinking that it is one among the causes of this presented object itself, though I cannot myself see that there are any. But that it is the *only* cause of this presented object I certainly do not believe, nor, I think, does anybody, and hence my judgment certainly cannot be "*The* cause of this is part of the surface of an inkstand." It might, no doubt, be possible to define some *kind* of causal relation, such that it might be plausibly held that it and it alone causes this presented object *in that particular way.* But any such definition would, so far as I can see, be necessarily very complicated. And, even when we have got it, it seems to me it would be highly improbable we could truly say that what we are judging in these cases is: "This presented object has one and only one cause, of this special kind." Still, I do not wish to deny that some such view may *possibly* be true.

The only other suggestion I can make is that there may be some ultimate, not further definable relation, which we might, for instance, call the relation of "being a manifestation of," such that we might conceivably be judging: "There is one and only one thing of which this presented object is a manifestation, and *that* thing is part of the surface of an inkstand." And here again, it seems to me just possible that this *may* be a true account of what we are judging; only I cannot find the slightest sign that I am in fact aware of any such relation.

Possibly other suggestions could be made as to what the relation is, with regard to which it could be plausibly supposed that in all cases, where we make these judgments, we are in fact judging of the presented object "There is one and only one thing which stands to this object in *this* relation." But it seems to me at least very doubtful whether there is any such relation at all; whether, therefore, our judgment really is of this form, and whether, therefore, this part of the surface of this inkstand really is known to me by description as *the* thing which stands in a certain relation to this presented object. But if it isn't, and if, also, we cannot take the view that what I am judging is that this presented object *itself* is a part of the surface of an inkstand, there would seem to be no possible alternative but that we must take some view of what I have called the Mill–Russell type. Views of this type, if I understand them rightly, are distinguished from those which I have hitherto considered, by the fact that, according to them, there is nothing whatever in the Universe of which it could truly be predicated that it is this part of the surface of this inkstand, or indeed that it is *a* part of the surface of an inkstand, or an inkstand, at all. They hold, in short, that though there are plenty of material things in the Universe, there is nothing in it of which it could truly be asserted that *it* is a material thing: that, though, when I assert "This is an inkstand," my assertion is true, and is such that it follows from it that there is in the Universe at least one inkstand, and, therefore, at least one material thing, yet it does not follow from it that there is anything which is a material thing. When I judge "This is an inkstand" I am judging this presented object to possess a certain property, which is such that, if there are things, which possess that property, there are inkstands and material things, but which is such that nothing which possesses it is itself a material thing; so that in judging that there are material things, we are really always judging of some *other* property, which is not that of being a material

thing, that there are things which possess *it*. It seems to me quite possible, of course, that some view of this type is the true one. Indeed, this paper may be regarded, if you like, as an argument in favour of the proposition that some such view *must* be true. Certainly one of my main objects in writing it was to put as plainly as I can some grave difficulties which seem to me to stand in the way of any other view; in the hope that some of those, who reject all views of the Mill-Russell type, may explain clearly which of the alternatives I have suggested they would adopt, or whether, perhaps, some other which has not occurred to me. It does not seem to me to be always sufficiently realised how difficult it is to find *any* answer to my question "What are we judging in these cases?" to which there are not very grave objections, unless we adopt an answer of the Mill-Russell type. That an answer of this type *is* the true one, I am not myself, in spite of these objections, by any means convinced. The truth is I am completely puzzled as to what the true answer can be. At the present moment, I am rather inclined to favour the view that what I am judging of this presented object is that it is itself a part of the surface of an inkstand—that, therefore, it really is identical with this part of the surface of this inkstand, in spite of the fact that this involves the view that, where, hitherto, I have always supposed myself to be perceiving of two presented objects that they really were different, I was, in fact, only perceiving that they *seemed* to be different. But, as I have said, it seems to me quite possible that this view is, as I have hitherto supposed, sheer nonsense; and, in any case, there are, no doubt, other serious objections to the view that this presented object is this part of the surface of this inkstand.

Meeting of the Aristotelian Society at 22, Albemarle Street, W. 1, on December 2nd, 1918, at 8 p.m.

II.—SIR RABINDRANATH TAGORE: POET AND PHILOSOPHER.

By F. B. JEVONS.

I FIND that for myself the easiest way to approach Sir Rabindranath Tagore's book on *Personality* is to start from Dr. Merz's *Religion and Science.* Dr. Merz points out that there are two ways in which we may, and indeed do, consider the world, or two aspects which it wears: in one the world—everything of which I am, or can be, aware—falls within my consciousness; in the other I am surrounded by a world external to me. In one the experient is but a speck infinitesimally and inconceivably small in a world of reality external to him; in the other everything of which he is or may be aware must be part of his experience. These two views, according to Dr. Merz, if I understand him right, cannot by any process of composite photography, if I may so put it, be combined into one; combining the photograph of the exterior of a building on to a plate containing the photograph of the interior would produce not a composite photograph but a mere jumble. We cannot combine the two views into one: we can only, Dr. Merz says, "let our thought wander from one to the other without trying to unite both aspects in one moment of time."

These two appearances which the world presents, these two aspects which it wears, may be, as by Dr. Merz they are, termed the inner and the outer. From the one point of view the world is within me; from the other, without. But the world, according to Dr. Merz, which wears these two aspects, is one world; philosophy he, following Plato, considers to be

"synoptic"—its business is to see things in their "togetherness," in their *ensemble*, to use Comte's word—and yet the two aspects of things cannot be seen "synoptically," in their *ensemble* or "togetherness," for our thoughts can only "wander from one to the other" without even trying to unite them. Philosophy therefore, it would seem, is impossible: its business cannot be done. That assuredly is not the conclusion which Dr. Merz wishes to reach, for it brings us no nearer the one reality, it leaves us instead with two appearances on our hands. The within and the without neither are nor ever can be united: our thoughts must for ever wander from one to the other. Such is the consequence of starting from the aspect of things, or rather from the two aspects of the world: if you begin with aspects, with aspects you must end; you don't touch bottom—reality—at the beginning, nor can you at the end rise to the real. If, with the solipsist, you confine your attention to the inner aspect, you part with the reality of things; if, with the scientist, you concentrate your attention on the outer aspect, you abandon the reality of persons. And the unrealities will not combine at all—still less combine into one real.

Dr. Merz has himself on more occasions than one argued that science, which analyses things, never succeeds in exactly putting together again what it has pulled to pieces. And this suggests that the reason why no combination of his two aspects is possible may conceivably be that they are themselves the result of analysing what is real and given. The dissection of reality into its two aspects may mean that the real is killed by the operation, and that after the operation the two cannot be combined so as to produce one living reality again. In that case, the best thing will be to start not from abstractions, such as aspects, but from the one living reality, if we can find it. And the purpose of Sir Rabindranath Tagore's book precisely is to help us to find it.

It may perhaps create a prejudice against his method of procedure to say—but it must at the outset be said—that he

neither puts his trust in logic, nor defines the terms with which he operates, *e.g.* personality, reality, art.

Not by logic is every truth to be obtained (p. 67). Logic, "by its method of decomposition, brings the universe to the brink of dissolution" (73). By contrast with logic and reasoning, he says, "man with his prayer knocks at the gate of the infinite in him, the divine, thus revealing his deepest instinct, his unreasoning faith in the reality of the ideal,—the faith shown in the readiness for death, in the renunciation of all that belongs to the self" (105). The ultimate truth is not obtained by logic but given in a faith not based on reasoning.

As for definition, "definition of a thing which has a life growth is really limiting one's own vision in order to be able to see clearly. And clearness is not necessarily the only, or the most important, aspect of a truth. . . . In our zeal for definition we may lop off branches and roots of a tree to turn it into a log, which is easier to roll about from class-room to class-room, and therefore suitable for a text-book. But because it allows a nakedly clear view of itself, it cannot be said that a log gives a truer view of a tree as a whole" (6, 7). As Dr. Merz had said (in his *History of European Thought in the Nineteenth Century*, III, p. 405), "every definition has not only the advantage of producing clearness and exactitude; it has also the disadvantage of narrowing the field of vision, leaving out much that lies outside, but which, though less defined, is not necessarily less real and important." No one, I suppose, imagines it possible to define life, or to doubt its existence; and, generally speaking, the terms which it would be most interesting to define, *e.g.* religion, God, spirit, consciousness, are indefinable.

But though we cannot define those terms any more than we can define personality, reality, or art, we can and do use them, and talk about what they stand for, *e.g.*, even if we cannot define either "art" or "personality," it is quite intelligible to say "the principal object of art is the expression of person-

ality" (19). And, as those terms originally were themselves metaphorical, so the language used in speaking of them will, and of necessity must, be metaphorical — poetical, "the language of picture and music" (19), as, when dealing with what is indefinable, it should be, rather than logical. Tagore, at any rate, is a philosopher who speaks like a poet. His mission is that of the prophet—neither to define the truth nor prove it but to convey it. And the prophet, because he is man "through the things belonging to him, expresses something that is not in them" (38).

Our personality we know only by feeling: it is not a conclusion reached as a result of any logical process. It cannot be expressed by "by merely informing and explaining": but it "feels the longing to express itself for the very sake of expression" (17). One expression which it gives to itself, one expression of personality, is beauty, for beauty is always the expression of personality, never a mere fact having an existence independent of persons. Persons alone can either feel beauty or give expression to it. This truth applies not only to pictures and poems which express the personality of the human being who creates them: it applies also to God's creation, which is the expression of His personality. "Where the sky is blue, and the grass is green, where the flower has its beauty and fruit its taste, where there is not only perpetuation of race, but joy of living and love of fellow-creatures, sympathy and self-sacrifice, there is revealed to us the Person who is infinite" (32). "This world, whose soul seems to be aching for expression in its endless rhythm of lines and colours, music and movements, hints and whispers, and all the suggestions of the inexpressible, finds its harmony in the ceaseless longing of the human heart to make the Person manifest in its own creations" (33). "In Art the person in us is sending its answers to the Supreme Person, who reveals Himself to us in a world of endless beauty" (38).

Though we cannot define personality, we may perhaps

inquire what are the contents of personality. And we learn that there is, first, the world which appears to us: "this apparent world is man's world" (13). But "the one effort of man's personality is to transform everything with which he has any true concern into the human" (29). The apparent world only "becomes completely our own when it comes within the range of our emotions" (14); and, becoming completely our own, it becomes another world: "our emotions transform this world of appearance into the more intimate world of sentiments" (14). Man not only "has the inherent power to select things from his surroundings in order to make them his own," but the emotional forces, "which transmute things into our living structure," are "creative forces" (13). The apparent world becomes another world, a world of reality, *pari passu* as it "becomes a part of our personality. It grows with our growth, it changes with our changes. If this world were taken away, our personality would lose all its content" (13), and this world of reality owes its reality to the "creative forces" working in or through us, the "emotional forces." Yet emotions, apart from persons, are mere abstractions: the "central creative power" of each man's world is his own personality (50): the mind is not a mirror "more or less accurately reflecting what is happening outside us"—"our mind is itself the principal element of creation" (47).

The way in which Tagore expounds his position seems to me, if I may venture to say so, somewhat schematic. He postulates a world which, since it becomes—"when it comes within the range of our emotions"—a part of our personality, is to start with not a part of our personality. He postulates an "apparent world"—which is "man's world"—a world which has "shape, colour, and movement" (13), but of which at first we are aware without any emotion. Only when emotion comes to supervene, or to suffuse it, does this apparent (or supposititious) world become "the more intimate world of sentiments," *i.e.* the world which is real and not supposititious. Inasmuch

as "the real is not that which is merely seen" (31), the world of which the shape, colours and movement are merely seen, without emotion, is not real. Thus we appear to be left with two worlds on our hands, a world which is real, and a world which is not. It would, it seems to me, be easier to understand, if we might suppose both to be real, though in different degrees. Then we need not postulate a world which is not real, which is not contained within personality; and we could still assert that the world becomes, or may become, more and more real, or, what is the same thing, more and more part of our personality. At any rate, whether there be degrees of reality or not, reality is found, according to Tagore, in the content of personality.

Before, however, turning to his pronouncements on reality, we must resume his account of personality, "the creative power," "the principal element of creation." "Life is perpetual creation . . . it outgrows itself in the infinite" (65). "In our life we have one side which is finite, where we exhaust ourselves at every step; and we have another side, where our aspiration, enjoyment, and sacrifice are infinite" (30), and our personality "is conscious of its infinity and creates from its abundance" (35), "it has the paradox in it that it is more than itself; it is more than as it is seen, as it is known, as it is used" (38). "Only by living life fully can you outgrow it" (64). "Man not merely piles up things outside him, but creates himself" (13).

If we commit the error of regarding the mind as a mirror which reflects what is happening outside us, if we regard reality —to turn now to reality—merely as something presented to us, as that of which we are aware, then we place ourselves outside reality. And to do so is obviously wrong, not merely—if I may interpose the remark—because it implies that we are not real (as W. James and those philosophers who operate with the metaphor of the stream of consciousness imply, when they figure us as being on the bank and outside the stream of reality, contemplating it) but because it emphasizes the fact of

contemplation to the exclusion of the fact that in action we act upon reality and are acted upon by it; and the truth is that we are part of reality, and so know reality from the inside and do not merely contemplate it *ab extra*. When, then, Tagore tells us that reality is the personal relationship binding our hearts with the Supreme Person, or the eternal relation with the Supreme Person, he must be taken as merely adumbrating, and not as defining, reality. At the same time, so far as the nature of reality admits of being figured as a relation, it admits, we may remark, of the conception that reality may have degrees: if there can be "a fuller relationship" (78), there can be a relationship which is less full. And this seems to be not inconsistent with picturing reality as not merely a relation between our personality and the Supreme Personality, but as the unity of the two. By postulating degrees of reality, we do indeed postulate degrees of unity: we admit, that is to say, or rather insist, that the unity is more or less imperfect. But at the same time, however imperfect we conceive the unity to be, however low we place the degree of unity, we refuse to admit that the unity is ever non-existent, for "the nature of Reality is the variedness of its unity" (54). Its unity is not a blank uniformity but a unity which includes variety. Within that unity there is variety and change; to assert change and deny unity is the same as it would be to say that in a melody there are the changing notes, but that there is no tune. The nature of the melody is just the variedness of its unity: there would be no melody, if either the variedness of the notes or the unity of the whole were absent. To the play of *Othello* the variety of the characters and the unity of the plot are alike essential: without the variety there would be no unity, without the unity of the plot there would be no field on which the variety of the characters could be displayed. Variety is impossible without unity, and unity without variety is equally inconceivable: there is variety in the unity and unity in the variety. The many are necessary "for the realisation of the unity" (68).

The nature of a society of any kind—if the remark may be interjected—is the variedness of its unity and its variety in unity, and unity in variety. Its members are in it, but it is in its members. And it may be useful to note that the sociologist Durkheim* is led to the conclusion that "it is probable that at the bottom and ultimately the concepts of the Whole, of Society, of God are but different aspects of the same notion." Remembering that the Whole is in one sense infinite, we may return to Tagore's exposition.

The finite is in the infinite, but the infinite is also in the finite. I, as a particular finite individual, am in the centre of an infinity radiating in all directions. Yet, from another point of view, everything of which I am aware is, and all that I shall ever be aware of will always be, within me. Though the finite is within the infinite, yet the infinite is in the finite, much as the notes are in the tune, yet the tune is in the notes; or as a society is in its members, while the members are in the society. In fine, not only does "the infinite assume finitude" (53), but the finite is essential to the infinite; and neither is intelligible without the other: "Neither the transitory nor the eternal has any meaning separately" (61). The sage of Ishopanishat, as quoted by Tagore, says: "They enter the region of the dark who are solely occupied with the knowledge of the finite, and they into a still greater darkness who are solely occupied with the knowledge of the infinite" (56). The former are the men of science; the latter, the philosophers of the Absolute.

Neither the finite nor the infinite has any meaning separately; neither the transitory nor the eternal is intelligible without the other. Yet "what is meaningless, when unrelated, finds its full meaning in relationship" (83). Indeed it is only in their relationship to one another that we find either the finite and the infinite or the transitory and the eternal, or the inner and the outer worlds. This relationship "cannot be

* *Les Formes Élémentaires de la Vie Religieuse*, p. 630.

explained, it has to be realised; and when man has realised it, he sings:

> The inward and the outward has become as one sky,
> The infinite and the finite are united" (71).

Dissociate the finite and the infinite, or the inner and the outer, and their reality is gone: in place of the one reality you have but two aspects—"there is a point where the within and without are united; where infinite becomes finite without losing its infinity. If this meeting is dissolved, these things become unreal" (44). Therefore Upanishat says: "They enter the region of darkness who pursue the transitory. But they enter the region of still greater darkness who pursue the eternal" (57–8). "The infinite and the finite are one, as song and singing are one" (57): the air is in the notes and the notes are in the air. "The flowing of the river is the river itself" (63).

The context of personality then is the real; and, as the real cannot be dissected into the finite and the infinite—or into any pair of aspects—without losing its reality, so neither can personality. The personality which contains and is contained by reality can no more be dissected than reality itself. "It is not in my own individual personality that this reality is contained but in an infinite personality" (58). At the same time our soul itself is infinite (63), and "this world is the world of infinite personality" (61). "The earth and the sky are woven into the fibres of man's mind, which is the universal mind at the same time. . . . The Great Master plays; the breath is His own, but the instrument is our mind through which He brings out his songs of creation, and therefore I know that I am not a mere stranger resting in the wayside inn of this earth on my voyage of existence, but I live in a world whose life is bound up with mine. The poet has known that the reality of this world is personal" (74).

The world is not merely the content of personality: personality is the "central creative power" of all worlds, and of

all reality: "reality is the expression of personality like a poem, like a work of art" (69). Personality, "the conscious principle of one-ness, the centre of relationships, is the reality" (98). Personality, in its perfectness, is "the ultimate object of attainment" for all personalities that are imperfect. "Personality, which is the sense of unity in one's own self, yet finds its real truth in its relationship of unity with others" (96). "There is a spirit of one-ness in us, which carries whole eternity in its present moment. . . . Because we are conscious of this One in us which is more than all its belongings, which outlives the death of its moments, we cannot believe that it can die" (66). In a piece of music the note that has been struck is in one sense dead and gone, yet it lives still in the piece as a whole: it never did exist, and never will exist, apart from the whole; before it sounded it was implied in what preceded it; and its real existence is as much in what precedes and follows it as it is in the moment it is struck. The piece of music would be as impossible without the particular note as would the note without the whole air. The meaning of the words (not quoted by Tagore) that "the dead go hence and are no more seen" is the same as that of the statement that the note is struck and no more heard. The particular notes (or individual persons) live throughout the whole, though they, all of them, are not the whole: they are in it, and it is in them; and for that very reason they are not it, nor is it they. The finite person is not the infinite, nor is the infinite personality finite.

But all this talk, it may be objected, is that of an observer, standing both outside the finite and the infinite—a position impossible to occupy, for we do not watch the stream of consciousness, or the stream of reality, from the bank, we are in the stream. Or, to put the objection in another way, the notes in a piece of music, as a matter of fact, are not conscious, active beings—the piece of music and its notes exist solely in us and not in themselves. The reply to the objection is that it is not,

as the objection assumes, necessary to stand outside the finite-infinite, or on the bank of the stream of consciousness, in order to be aware of it. Only in the stream of consciousness can we be conscious; only in the stream of reality can we be real. Only in that stream and not on the bank is our personality conscious or real; and there our personality "is conscious of its infinity" (35). It is precisely because we know the stream from the inside that we have no need to try to see it *ab extra*. The finite is indeed in the infinite; but, also, the infinite wells up and through the finite: "we have come to the meaning of all reality, where the infinite is giving himself out through finitude" (69); "man has also known direct communication of the person with the Person, not through the world of forms and changes, the world of extension in time and space, but in the innermost solitude of consciousness, in the region of the profound and the intense. Through this meeting he has felt the creation of a new world, a world of light and love that has no language but of music of silence" (71). "Life is here to express the eternal in us . . . life is perpetual creation" (65).

The position impossible to occupy is that of the man who imagines either the finite or the infinite to be intelligible without the other, who assumes the finite to exist by itself and denies that in doing so he has postulated the existence of the infinite. And that is the position occupied, in Tagore's view, by the man of science. There is the world of science, but it is not a world of reality: from it "the elements of personality have been carefully removed" (16); "it is an abstract world of force. We can use it by the help of our intellect but cannot realise it by the help of our personality" (4). There is, however, another world, the world of Art, which is real to us, and of which it is characteristic that we cannot analyse it or measure it. "A scientist can make known what he has learnt by analysis and experiment. But what an artist has to say, he cannot express by merely informing and explaining . . . Pictures and songs are not merely facts—they are personal

facts . . . they defy analysis and they have immediate access to our hearts" (16). A flower is nothing when we analyse it, but "the beauty of a flower is infinitely more than its botanical facts" (83), "it is positively a flower when we enjoy it" (62). By analysis we can only attain to the abstract. "The true principle of art is unity" (20), but science, following the direction of analysis, departs ever further away from the unity which is its starting point: food may be analysed but its taste-value cannot—taste is unanalysable, a unity which cannot be analysed.

If it be objected that science not only analyses but generalises and classifies, with the view of unifying all things ultimately, the reply is that "the scientist seeks an impersonal principle of unification, which can be applied to all things. For instance, he destroys the human body which is personal in order to find out physiology, which is impersonal and general" (23–24). The scientific, impersonal principle of unification is rejected by Tagore, for whom personality is at once the source and the consummation of all reality. Yet in his rejection there are two strains, of reasoning and of feeling, which doubtless harmonise, since he plays on both, but which undoubtedly at first strike one as a discord. In the one strain the rejection of science does not seem absolute: science "has its greatness and uses and attractions, and we are ready to pay homage due to it" (52); "Science guides man's rebellion of freedom against Nature's rule. She is working to give into man's hand Nature's magic wand of power; she is to free our spirit from the slavery of things" (90). There is indeed a difference between the knowledge which comes of reasoning and that which comes "by a more immediate perception through sympathy" (77). In God's creation "forces and matters are alike mere facts" (34), and it is with mere facts that science and reasoning have to do. But they are facts, for the Supreme Person "reveals Himself to us in a world of endless beauty across the lightless world of facts" (38). My

world " has been given to the personal *me* by a personal being. But the process of the giving—though not the gift—can be classified and generalised by science " (68). The world of science and of facts is the world of reason, and " with the world of reason we must be in harmony fully to satisfy our needs " (82), and not only to satisfy our needs, for, though man must know in order to live (10), still he has a surplus of knowledge and so pursues knowledge for its own sake and enters " the world of reasoning," which is not the world of reality—" the reality of the world belongs to the personality of man and not to reasoning " (52). Just as " reasoning is not the man himself, neither is the world of reasoning the world of reality " (52). The difference between these two worlds is the difference between knowing a book and measuring and weighing and counting its pages and analysing its paper: " an inquisitive mouse may gnaw through the wooden frame of a piano, may cut all its strings to pieces, and yet travel farther and farther away from the music " (56). Nevertheless, the pages and the paper of the book, the strings and the frame of the piano, are facts which inquisitive science measures and weighs and pulls to pieces, and Tagore's rejection of science does not seem absolute.

But, in another strain his rejection of science does appear absolute: the facts on which science builds are mere abstractions. At the " fatal touch " of science, " the reality of the world is so hopelessly disturbed that it vanishes in an abstration where things become nothing at all. For the world is not atoms and molecules or radio-activity or other forces, the diamond is not carbon, and light is not vibrations of ether. . . . Not only the world but God Himself is divested of reality by Science, which subjects Him to analysis in the laboratory of reason outside our personal relationship and then describes the results as unknown and unknowable " (50–1). " We cannot believe in the finality of that logic which brings the universe to the brink of dissolution " (73). The truth is that not by

logic and elaborate argumentation is every truth to be obtained (67): "the evidence of the world of stars is simple. You have but to raise your eyes and see their faces and you believe in them. They do not set before you elaborate arguments, and, to my mind, that is the surest test of reliability" (43). In fine, in this strain, with logic and with reasoning we can dispense, and trust to our deepest instinct: "man with his prayer knocks at the gate of the infinite in him, the divine, thus revealing his deepest instinct, his unreasoning faith in the reality of the ideal,—the faith shown in the readiness for death, in the renunciation of all that belongs to the self" (105).

Thus the "facts" of science melt into the thin air of abstractions; logic leads not to the truth; there is and only can be one real world—the world of "unreasoning faith." Between the strain of reasoning, which accepts the facts of science, and the strain of feeling which rejects them; between the reason which is not the man himself, and the personality which is, there seems, if only seems, to be a discord. This discord, however, is resolved—if I understand Tagore aright—by simply re-instating reason, "Reason, which is universal—Reason which guides the endless rhythm of the creative idea, perpetually manifesting itself in its ever-changing forms" (54). But does this resolve the discord? or, rather, resolve it in Tagore's sense? On this view the one and only real world, at least seems to be not the world of "unreasoning faith" but "the world of reason," the world of "the creative idea," of which the "facts" of science are "the ever-changing forms," though we are told that "forms of things and their changes have no absolute reality at all" (58). Not only on this view do the mere abstractions of science once more become real facts, but law also resumes the reality it had lost. The unreality of law, as a substitute for the infinite personality, is evident because "then the whole world crumbles into abstractions; then it is elements and force, ions and electrons; it loses its appearance, its touch and taste; the world drama with its language of

beauty is hushed, the music is silent, the stage mechanism becomes a ghost of itself in the dark, an unimaginable shadow of nothing, standing before no spectator" (58–9). Yet, on the other hand, the law of space and time, of form and movement, so far from being unreal, "guides the endless rhythm of the creative idea," "this law is Reason, which is universal." If reason is indeed universal, then obviously it must be present not merely and only in "the world of reasoning," but also in "the world of reality."

Tagore's gravamen against science has for its basis that "this world is a real world only in its relation to a central personality. When that centre is taken away," as by science it is taken away, "then it falls to pieces, becomes a heap of abstractions, matter and force, logical symbols, and even those —the thinnest semblances of reality—would vanish into absolute nothingness, if the logical person in the centre, to whom they are related in some harmony of reason, were nowhere" (98). But Tagore's "world of reality," his "world of infinite personality," from which law and logic and reasoning are excluded, and in which knowledge, real knowledge, is given by sympathy alone, and where a flower is positively a flower only when we enjoy it,—this "world of reality" is just as unreal if reason is not in it as the world of science, "the world of reasoning," is if there be no central personality in it.

In the upshot, on Tagore's own showing, it would seem that neither "the world of reasoning" nor "the world of reality" is ultimate: both are but aspects of the one reality, which is, alike originally and ultimately, *there*. There it is, now and always. If the way of analysis, which leads but to the grave, or "by its method of decomposition brings the universe to the brink of dissolution," is the path which science treads, science is but following the lead of such philosophers as analyse the one and only real into a world of reasoning and a world of reality. If, however, Tagore does really, as apparently he does, thus analyse the one reality, which is, now and always, *there*, it

is because he is temporarily forgetful of his own principle, that "the nature of Reality is the variedness of its unity," and because, in forgetfulness of his own principle, he hands over the variedness of Reality to science for further analysis, and assigns to philosophy the blank unity which is all that is left. The variedness in unity exhibited by the nature of Reality seems, as has been already suggested, compatible with the notion of degrees of reality; but not even in the lowest—nor indeed in the highest—of those degrees can we suppose that there is either variedness without unity or unity without variedness. We might just as well suppose that experient and experience could exist apart from one another, and ascribe to one—it matters not which—variedness without unity, and to the other—whichever it may be—unity without variedness. In the Reality of which we are part, and in part aware, we know nothing but experient and experience—and them not apart, but only in the unity of Personality, and only in the variedness of its unity.

Meeting of the Aristotelian Society at 22, Albemarle Street, London, on December 16th, 1918, at 8 p.m.

III.—SYNTHESIS AND DISCOVERY IN KNOWLEDGE.

By JOHN LAIRD.

ACCORDING to some theories of knowledge, true cognition is simply discovery. In the last analysis, objects with their characteristics are given or revealed to the mind. The end of all our seeking in this affair, whether we are curious inquirers intent upon holding the torch of truth, or work-a-day men and women anxious to secure a little guidance for our footsteps with a humble lantern, consists in the finding or acceptance of fact. This variety of phrases indicates, broadly speaking, one and the same conception of knowledge. On the other hand, many philosophers speak a different language, and seem to follow a radically different course of thought. For their philosophy, knowledge is essentially synthesis or construction. The mind is a centre of organisation whose be-all and end-all in thinking is the weaving of a seamless unity of experience. The synthetic activities of the mind can never be given, and the unifying constructiveness which is the heart of it must be supposed to beat with the rhythm and to be the very principle of the cosmos itself.

The simplest way of attempting to stop this quarrel is to maintain that both parties are right in respect of some varieties of cognition, and wrong with regard to others. After all, there are many species of cognition, since the term includes perception, imagination, judgment, and inference; and some of these may be processes of construction while others are mere finding. Thus perception, it might appear, is plainly discovery. It is absurd to suppose that Hernan Cortes and his men made the Pacific when they descried it from that peak in Darien.

Similarly, judgment often appears to be the mere acceptance of a datum. In what other way, for example, can an orthodox Presbyterian accept the *Westminster Confession?* On the other hand, Shakespeare's fine frenzy, or Abt Vogler's rapture, or Thackeray's dalliance with the children of his fancy are surely instances of constructiveness, and the same must be said of those complex intellectual processes which we call systematic thought. The system-makers are intensely and overpoweringly creative. We should distinguish, in a word, between the constructive and the receptive varieties of knowledge, and not attempt to join what Nature has put asunder.

It is needless to point out that no solution can be reached by these short and easy methods. A very celebrated philosopher, it is true, believed that every piece of significant knowledge contained a moment of receptivity and a moment of spontaneity. But that is quite another story, and the particular solution which we have sketched in outline, is, of course, hopelessly inept. Indeed, the precise contrary of this theory would be just as easy to defend. The *æternæ veritates* do not brook interference from finite minds; the properties of numbers and triangles are very hard data, and system-makers striving to find the one conception which will fit the facts need not be supposed to be creators unless it is also necessary to assume that every man is a locksmith who searches for the right key in his bundle. In comparison with these intellectual objects, the phenomena apprehended in perception seem to be much liker constructs. We hear the clock beating tick-tack, but is it not we ourselves who are responsible for its accented rhythm? Why does the puzzle-picture look so different when the "prince" has been found, and why did Mr. Mackenzie's little hero see "the lozenges of space come out from their frame and move about in a blur" when he looked at the trellis very hard? If we perceive N-rays because we expect to perceive them, is it wholly out of the question that no N-rays were there? These conundrums, it is true, may perhaps be

answered in a way that squares with a literally realistic theory of perception, but in that case a great deal of pains and subtlety is required in order to explain the precise fashion in which they do so.

The rejection of this attempted solution, then, leaves the original antithesis where it was, and the contrast between the theories which regard cognition as a specific kind of organisation, and those which treat the process as one of discernment or discovery, is so fundamental that it often looks as if the adoption of a merely intransigeant attitude on one side or the other was the only feasible course. The contention of one party is sometimes expressed in the thesis that knowing is simply not making, and that this is an end of the matter. The contention of the other party is that objects, as we mean and intend them, are never given to the mind, and that this circumstance is absolutely final. A radical divergence of this kind, therefore, might seem to indicate that each party must be left to develop its theory in its own way. The heroes of Valhalla themselves might tire of a bloodless battle in which neither army can come even into shadowy grips with the other. *Per contra*, both types of theory profess to interpret one and the same set of facts, and therefore it is scarcely credible that they should remain permanently at cross purposes in all important respects. On any theory, it appears to be a simple matter of fact that the mind in knowledge is confronted with an object which it apprehends directly, that this object is not the process of apprehension, and that the presumption is that it is just what it presents itself as being. On any theory, again, it seems to be plain that the part which the mind plays in this affair may be intensely active, and that it is never merely receptive. Even the scholastic theory of the *species impressa* assumed that the mind, in this extreme instance, was passive only in the sense that its response required to be elicited through extra-mental stimulation, and could not occur spontaneously. The researches of later psychologists tell the

same tale. Apperception, acquirement of meaning, and the rest are terms which describe genuine facts of psychology, and these facts are directly relevant to the problems of cognition.

These statements of the contrast are intentionally vague, but they suggest, even in their vagueness, that part of the difficulty may be due to the variety of considerations involved in the problem, and to the arbitrary restrictions which some of these may receive during the course of discussion. An object, for instance, might be given to the mind without being passively impressed upon that puzzling substance, or indolently received by it; and at least two guesses might be hazarded concerning the way in which this could occur. In the first place, it is possible that the mind needs to be intensely active in order to discriminate or discover correctly since it has to secure the right position for its inspection, and since it must inhibit subjective bias and irrelevant tendencies. Indeed, the fundamental obstacle in the way of accurate knowledge may be just the impossibility of being wholly successful in this endeavour, or, on a less sceptical view, of being justified in believing that indisputable success has been attained. In the second place, apprehension itself may be neither active nor passive, although it is rendered possible and sustained by certain correlated active processes. These suggestions, it is true, may not seem to be very helpful, but even unpromising paths are sometimes worth exploring, and, at the worst, philosophical excursions into blind alleys need not do any harm. It is pardonable, therefore, to develop these alternatives for a little.

The first suggestion, then, is that knowledge always consists in the direct apprehension of an object revealed to it, and that the activity of the mind in knowledge is only a process of adjustment directed to this end. Attention, for example, might be defined as that conative process which is directed singly to cognition, and although objects are sometimes presented to the mind without the need for attention in any

marked degree, this circumstance proves only that the necessary mental adjustment takes place automatically in such cases. In most instances very active concentration is needed. These conative processes, however, on this hypothesis, are always merely instrumental to cognition proper, *i.e.*, to direct inspection of the object.

This theory sounds very simple. Indeed, it is probably too simple for most philosophers, even if they admit that any theory sounds simple when expressed in the most general terms possible, and even if they are not convinced beforehand that the dignity and arduousness of philosophy require every investigator into that subject to undertake the "labour of the notion" after a certain approved pattern. None the less the theory may readily be defended against many of the objections that are commonly brought against it. There is very little force, for instance, in the argument that the mind, if this theory were true, would be only an inert spectator of a passing show, miraculously endowed with the capacity for beholding the drama of existence, but unable to play any intelligible part in it. The theory does not imply that cognition is useless or that it is unable to guide the mind in attending to practical affairs. All that is meant is that cognition is apprehension, and that apprehension is true precisely in proportion as it does not alter its object, whatever that object may be. And this thesis seems thoroughly defensible. If, when we set out to discern this thing or the other, we necessarily altered the character of the object by apprehending it, our aim would always be frustrated since we should always discern something else; and the same argument would apply, in turn, to our discernment of the very proposition that apprehension necessarily modifies its objects. Again, the fact that we are able to observe, surely does not prove that we are mere spectators in all our mental operations; and it is very hard to be forced to suppose that a practical man is not properly equipped unless he is wholly unable to apprehend things as they really are. Besides, where is the miracle?

True apprehension, let us hope, is not miraculous in the sense of being rare or because it is successful, or because it is what it is. Why, therefore, should we feel surprised ?

Still less serious is the objection that this account of apprehension would hold good of " static " objects only, so that process and progress would both be impossible. The idea that transience is inapprehensible depends upon two illegitimate assumptions, the first of these being that any apprehended object must exist contemporaneously with the apprehension of it, and the second that this process of apprehension is itself without duration. If the first assumption were true and the second false, a transition having the same duration as the process of apprehension might be apprehended. If the second were true and the first false, there would be nothing in theory to prevent the apprehension of any assignable stretch of transition ; and the same conclusion follows when both assumptions are denied. A transition, therefore, may be apprehended. And if the transition in the universe is that of progress or creative evolution on the one hand, or of retrogression on the other, how does the apprehension of these characteristics prevent the acceptance of this conclusion ?

The objection that this analysis holds of one very limited species of knowledge only, viz., knowledge by direct acquaintance, can also be answered. It is true that we have knowledge of many objects with which we are not directly acquainted. We do not know them but know *of* them. Thus the knowledge that any so-and-so, or the so-and-so, or a so-and-so is such-and-such does not imply direct acquaintance with the object or objects so designated. On the other hand, knowledge of this kind implies that the mind is directly acquainted both with the description and with the fact that the description specifies some object or class of objects. The description together with its specifying reference is the datum apprehended in these cases, and this datum is apprehended directly. To put the matter otherwise, an object which is said to be apprehended merely by

description is not apprehended at all. What is apprehended is the description and its reference.

Greater difficulties arise in connexion with error and with the development of cognition. A very obvious retort to the preceding argument is that cognition always appears, at the first look, to be the apprehension of some object, but that this object may be mere appearance, not reality. It is absurd to speak of the discovery of false objects, or "false objectives," as these really are in themselves, but the "inspection theory" of knowledge gives no hint of the way in which the critical distinction between true and false can be drawn. The truth of cognition can never be guaranteed by simple inspection.

This latter statement is, of course, indisputable, but the fact that inspection cannot guarantee the truth of cognition does not disprove the thesis that all cognition is inspection. There is no contradiction in the view that all cognition is inspection, that true cognition is inspection of objects as they are, and that false cognition is inspection of objects as they are not. Ultimately, indeed, this would seem to be the fact of the matter, whether or not error is "explained" by distortion of the object consequent upon mal-adjustment of the observing mind. Is it not wholly certain that cognition always has an object, and that this object is always apprehended? And is it not also manifest that this apprehension may be false? How then is error possible? Not surely, because, all error is partial truth, still less because all truth is partial error. The latter thesis is nothing but scepticism, even if the scepticism is buoyant with a conviction that lacks adequate vision. The former thesis does not resolve the difficulty. It may be granted, indeed, that all the elements of any complex which is falsely apprehended as a whole might be truly apprehended as members of some other whole; but dirt is still dirt though it be matter in the wrong place. The complex really is apprehended as it is not, and the fact, consequently, is either fatal to all theories or to none. It would seem, indeed, that anything which is capable of

appearing is, for that very reason, capable of appearing either truly or falsely.

Accordingly, the occurrence of mistakes in apprehension does not prove that objects are never apprehended as they really are. If it could be shown, however, that the great majority of the objects which we suppose ourselves to discover cannot be really what we take them to be, our simple faith would be rudely upset. The most important argument in support of this conclusion asserts that any apprehended object, whether it is a sense-presentation or a universal or what not, is really part of the totality of being, and yet must appear to us in comparative detachment, since the totality of being is never revealed to anyone. These premises are supposed to involve the conclusion that the objects presented to a finite mind cannot appear in their true character, since that character is *eo ipso* modified by its context in all cases. It is plain, however, that this argument contains the seeds of its own destruction, since the argument itself is not the whole of truth and consequently falls under the same condemnation as the objects it professes to invalidate. Indeed, its precise contrary must be admitted to be part of the basis of logic, and, as Dr. McTaggart says, happily adapting Sir John Eliot's famous phrase concerning Parliaments, 'None ever went about to break logic but in the end logic broke him."* The premises of a valid syllogism, for instance, must be finally true, irrespective of their context, if the syllogism itself is finally true. And all truth is final truth.

These contentions, however, do not overthrow the less sweeping assertion that some wholes are such that their parts are essentially modified by their contexts. The illustration usually given is that of an æsthetic whole. The actions in a drama, it is said, or the shadows in a painting have their reality only through their membership in the whole. Ophelia saw the

* *Studies in Hegelian Cosmology*, p. 292.

dumb-show, and so did Hamlet and the King, but what was mischief to Hamlet and agony to the King was nothing to Ophelia. It is clear, however, that these are overstatements. Even Hamlet and the King could distinguish the dumb-show from its significance; indeed, the fact that it was *only* a dumb-show had a great deal to do with its significance. None the less, the illustration is to the point, after all the necessary qualifications have been made, and if it could be shown that most of the objects we apprehend are so dominated by their context or by the purpose of the mind that accurate attentive discrimination of their elements is out of the question, this result would certainly be very damaging to the thesis that true cognition is literal discovery.

The facts, however, do not require this interpretation, even granting that the total object of sense perception, for instance, always has a fringe of images, feelings, and memories, or that the mind when contemplating universals never apprehends them except in a setting of images and feelings. These considerations certainly show that there is no such thing as the perception of an isolated sense datum or the cognition of a bare universal, but they do not prove that particular figures or colours, and specific universal terms and relations cannot be discerned within the whole complex (discriminated and undiscriminated) which is presented to the mind at any time. Logic, as we have seen, requires the contrary supposition with regard to the premises of an argument, and the facts of empirical psychology do not stand in its way. The case, perhaps, is more doubtful with regard to the discrimination of colours or sounds in perception or imaging, but even here the evidence is not at all conclusive.

Finally, in this connexion, the development of cognition raises points of difficulty in certain directions. These difficulties, it is true, may not seem to be very serious when they are described merely in general terms. If knowledge is discovery, the development of knowledge is progressive dis-

covery, and progressive discovery need not imply the abandonment of all discoveries which are made at early stages of the process. In the mathematical sciences, for example, progress consists partly in the deduction of conclusions hitherto unknown from known and accepted premises, and partly in the greater logical rigour by which the principles and the inferences of the science are tested. Neither of these kinds of advance is opposed to the thesis that knowledge is discovery, or implies that there can be no discovery short of the discovery of the whole. The newly discovered consequences may be simply additional to the premises already known, and the logical rigour aforesaid consists for the most part in the elimination of irrelevant elements from the principles, and in the discovery that principles supposed to be wholly unrestricted actually need restricting. This procedure, then, does not imply that knowledge is born, like Minerva, with the briefest of all obstetrical histories.

The growth of our apprehension of sense presentations, however, is more difficult to reconcile with this hypothesis, and the senses are certainly the earliest gateways of knowledge. There is differentiation of the presentation to consider as well as discernment of it. The very hue and texture of a percept change with increasing differentiation, somewhat in the way in which the visible appearance of a thing changes when it is seen under a microscope; and it is necessary to explain, somehow or other, how some presentations are better or worse, more or less adequate, than others. These difficulties, on the other hand, do not differ in principle from many well-known difficulties that arise without reference to development. In some sense or other, men, dogs, and horses are acquainted with the same things through perception, but it is plain that their sense presentations differ, that some of these presentations are more adequate than others (whatever the true interpretation of this fact may be), and that the difference in question is not merely one of more or fewer revealed qualities and relationships. These considerations, taken together, make it impossible to

suppose that a single objective world, in the most usual acceptation of that term, is literally revealed to all percipients irrespective of their degree of development and of their private constitution (for in that case every percept would contain an incalculable amount of error and distortion). It is noteworthy, however, that modern adventures in phenomenalism, supported as they are by re-interpretations of temporal and spatial relationships, suggest a wide field of possible alternatives.

The second suggestion we have selected for discussion is to the effect that cognition may be both construction and discovery, since it may always be the discovery of a construction. The reason why this suggestion is seldom explicitly contemplated or discussed in philosophical inquiries into the problems of knowledge is that the fact of apprehension is simply assumed in most of the theories which lay predominant emphasis upon cognitive synthesis. According to such theories, cognitive synthesis is the synthesis of ideas, symbolic images, or other mental contents, and these, it is supposed, are apprehended just because they are mental. Contents are contents of consciousness, that is to say, we are conscious of them, that is to say, they are apprehended. A feeling exists when it is felt; indeed, the fact that it is felt is the same thing as the fact of its existence. An image is a fact of consciousness, and an unconscious or unapprehended image is a contradiction in terms. And so of all ideas. On these assumptions, the apprehension of ideas implies no problem, because it is, strictly speaking, meaningless to ask whether an idea is apprehended, since any idea is a fact of consciousness, and, therefore, apprehended. Knowledge, we are told, is apprehension *through* ideas, or, in other words, the reference of ideas beyond themselves *is* that very apprehension of an object which is investigated in theories of knowledge.

While these assumptions are very easily made, they certainly should not be allowed to pass without challenge. In the first place, consciousness and cognition are not coextensive, so that, even if conscious existence and mental existence are precisely

identical, it does not follow that either of them is *eo ipso* apprehended. In the second place, there is clearly a difference between having a feeling, and attentively discerning this feeling. The feeling is the explicit object of apprehension during this introspective process, whereas in the absence of introspection, it is either not apprehended at all or apprehended in a very vague fashion. It is very hard to believe, however, that the attentive discrimination of a feeling during the process of introspection does not afford a genuine revelation of the characteristics of the feeling itself. On any other hypothesis, introspective attention to a feeling would create a new feeling partially resembling another feeling to which attention had not been directed, and it is hard to see how the truth of this could be known without introspective observation of both the resembling terms. If, then, characteristics of the feeling itself may be observed when we attend to it although they are not apprehended when we do not attend, it follows that the existence of conscious states need not be the same thing as their apprehended character.

It would be easy to pass from this argument to the fashionable theories of the unconscious, and to seek "metaphysical aid" from these murky regions. Yet these monsters had better be left alone. It would take a Jason to tame them, and he had a goddess and a princess on his side. This argument, then, is not intended to suggest anything whatsoever concerning the unconscious or the subconscious, but only to show that it is necessary to distinguish between the apprehension of conscious states and their existence. In the majority of cases, no doubt, this apprehension always occurs as a matter of course, and very probably no conscious state ever exists without being apprehended in some measure. But this circumstance does not annul the distinction, and when the distinction is admitted the suggestion now considered seems tenable.

A view of this kind, indeed, is indicated in some of the most celebrated arguments in the history of philosophy. A

wise man does not profess to understand Kant; for anyone who asserts that Kant meant so-and-so is certain to be accused of misinterpreting that author, and anyone who points out that Kant said so-and-so is bound to have contradictory passages cited against him. There is no culpable imprudence, however, in dwelling upon ideas that may be suggested by Kant's arguments, and most philosophers find this exercise very profitable. Now there is a clear suggestion of the kind we are contemplating at present in the subjective deduction of the categories, and in some other characteristically Kantian doctrines. Thus, if the unity of apperception requires that the manifold be traversed, that there should be reproduction of fleeting representations when any connected object of experience is grasped as a single whole, and that the recognition of this whole must be rendered possible by, and also presupposed in, the two former kinds of synthesis, Kant's argument would seem to imply that there is an intrinsically necessary connection between the moments of discovery and synthesis in all knowledge, since recognition is just the discovery of the result of traversing the manifold and of reproducing the earlier parts of it. More generally, Kant's synthetic unity of apperception appears to be essentially the discovery, by reflection, of the logical unity found in phenomena (*i.e.*, in the products of the organisation of experience through the categories). Indeed, this interpretation seems to be inevitable when read in the light of Kant's further doctrine that the activity of synthesis cannot itself be discovered by reflection or by any variety of intuition, but that it must either be simply postulated or else ascribed to a blind and indispensable faculty of productive imagination.

Be that as it may, the process of cognition in many of its features is reasonably described as synthesis, even in the literal sense of putting together. The active voice often seems to be the right one to use. What is knowledge, for instance, but the process of characterising an object? How can there be com-

parison without bringing objects into conjunction? Sometimes, indeed, it is supposed that even a superficial inquiry into the conditions of knowledge suffices to show that the active voice should always be used. The plain man may possibly believe that he has but to open his eyes in order to find reality revealed to him forthwith, but a very little philosophy shows how sadly he is mistaken. What he falsely supposes to be simple inspection of a perceived object is really, we are told, a very complex reaction to a stimulus. The stimulus only is given, and it leads to an integrated nervous response. Even if the mental response is not identical with the neural, this circumstance brings little comfort to the plain man's advocate. According to the hypothesis of interaction the natural supposition would be that the total neural response determines the mental one. According to the hypothesis of parallelism the most probable explanation would be that some sort of correlate to the bare excitation of the stimulus is given to the mind, and that this correlate is synthesised or sublimated in the total mental response in a manner corresponding to the integrated reaction of the nervous system initiated by the relatively simple stimulus. On either theory, therefore, the "given" element would play a comparatively subordinate part in the total mental reaction, and if the hypotheses of interaction and of parallelism are both discarded in favour of some more refined conception of psycho-physiological solidarity, the consequences would not appear to differ in this particular.

Stated in this form, the argument depends on a very gross confusion between the cause of perception and its object. Even when this confusion is avoided, however, a multitude of considerations points towards constructive synthesis. The facts described as apperception in the text-books of psychology seem to imply that the mind brings an atmosphere with it which modifies, and is modified by, any fresh element apperceived. There is adaptation of an old form to new material, and of old material to a new form. A familiar melody may be recognised

in many keys, and the same hills discerned in mist and sunshine, in the snow of winter and the russet of autumn. Often, indeed, what we call a perceived thing seems to be rather a nucleus of suggestiveness than an apprehended fact. It stirs our memories and emotions, it suggests plans of action, it supplies the impetus towards far-reaching analogies and sweeping generalisations. Universals, again, psychologically regarded, seem to be *foci* controlling a range of constructive possibilities. And if these arguments are not convincing, what explanation can be given of imagination? Images, undoubtedly, are apprehensible objects, but are they not also mental products? The reproductive imagination, perhaps, supplies exceptions. When a memory-image, for example, is said to be reproduced, the fact may be simply that a former percept is directly apprehended in the present. But there is productive imagery as well as reproductive. Gorgons, and hydras and chimeras furnish stock illustrations, and a few sentences from Mr. Conrad, or half a dozen lines from *Love in the Valley* tell the same story.

There is another side to the story, it is true. Even the most creative of artistic works is, in a certain sense, finding. The materials of imaginative construction are derived from sense, as all images are, and "Your setters forth of unexampled themes, Makers of quite new men producing them," are not the most skilful or the most original artists. It does not matter whether Mrs. Crupp had really been a mother herself, or whether she really said that a little brandy was the next best remedy for her complaint, though not so palatable to her as tincture of cardamums mixed with rhubarb and flavoured with seven drops of the essence of cloves. Mrs. Crupp was the quintessence of all landladies. She was all the truer to life, perhaps, because she never existed. Even the conventions of the novelist's craft are subject to the same fundamental condition, as Stevenson's whimsical complaint against the conclusion of *The Little Minister* shows. "*The Little Minister* ought to have

en ded badly," he wrote to Mr. Barrie, "we all know it *did*, and we are infinitely grateful to you for the grace and good feeling with which you have lied about it. If you had told the truth, I, for one, could never have forgiven you."

It is plain, however, that if reality can be said to be found or discovered by these methods of imaginative construction, the discovery or finding does not mean literal apprehension. What is constructed is a token or a parable which as a whole, and in certain characteristic details, symbolises reality. Consequently, if all knowledge were of this kind, the reality symbolised by such representative construction could be described only as a control to which the constructive activities of the mind were subject. This control might be more aggressive in sense perception and in logical thinking than in imagery, but it would be required in both cases. None the less, it would be known by its fruits only, for if it were directly apprehended as it is, the admission of this possibility would also be the denial that all knowledge is symbolic construction. The same argument shows that it would be impossible to distinguish, except quite indirectly, between the received and the contributed elements in a symbolic construction of this kind.

On the other hand, equally clearly, the theory that all knowledge is merely symbolic construction is tantamount to the denial of the possibility of knowledge. It would be easy, indeed, to summon the resources of dialectic to torture this heresy with boot and thumbscrews, but it is more humane to proceed to instant execution. Representative knowledge has the same logical basis as any other kind of knowledge by description, and, as we have seen, knowledge by description rests upon knowledge by direct acquaintance, since it presupposes acquaintance with the description (or representative), and with at least some instances of the way in which a description (or representative) actually holds of the objects specified by its means. The attempt to maintain that *all* knwledge is by

description is liable to the objections which dispose, once and for ever, of any theory implying that all knowledge consists merely in correspondence. Some things must be *known* to correspond, and not merely correspond to a correspondence, if the correspondence theory is to work at all.

This result leads to reflections of considerable importance. Creative imagination seems to be indubitably a process of mental synthesis and of mental productiveness. It also claims to reveal truth, and this claim must be admitted. Analysis shows, however, that the acceptance of the claim depends on the fulfilment of certain prerequisites. Neither the existence of the imaginative fabric nor the weaving of it by synthetic processes suffices to constitute any sort or degree of knowledge. The fabric must itself be apprehended; and if it indicates a reality beyond itself, this indication must also be apprehended and based upon the apprehension of cases in which the symbol is apprehended in specific relation with an apprehended thing which it signifies. This analysis may be extended quite generally to all the products of mental synthesis which claim to have a cognitive function, and the inference is very plain. Unless synthetic products always indicate other synthetic products, there is no ground for believing that knowledge is restricted to the apprehension of synthetic products, and if it is possible to prove that knowledge is, in fact, restricted to these products, the proof cannot rest simply upon the character of apprehension. Apprehension is only discerning, and, in so far forth, may be the discerning of anything. The fact that apprehension occurs does not *eo ipso* determine whether the object apprehended is or is not a mental product, whether it is sometimes a mental product and sometimes not, or whether the "putting together" of synthesis is always a "finding together" of non-mental elements which are falsely supposed to be "put together" because of the wide range of the mind in some of its explorations, and because of the rapidity and agility with which it selects the objects of its contemplation. The answer to such

questions must depend wholly upon the characteristics discerned in these contemplated objects.

During the remainder of this discussion an attempt will be made to consider some of the most general arguments which purport to prove that the conditions of possible experience, as revealed by analysis of the objects *de facto* apprehended, imply mental synthesis. The problems so arising are sometimes most conveniently treated in connexion with the question whether all the objects of mind are, in some degree at least, mental products, and there is no serious danger of ambiguity in raising the question in this form when that course is convenient. It is true that there might be mental products which are not the results of synthesis in the current sense, but, on the other hand, any object which implies synthetic construction is therefore a mental product, and all the objects which fall for consideration in these arguments are alleged to imply synthesis, and to be mental products on that account. Conversely, if any objects can be shown to be possibly non-mental, these objects cannot be synthetic constructions.

Some explanation of the term "mental product" is required, however, as a preliminary to this investigation. "Product" is often distinguished from process, and regarded as a finished article removed from the workshop. This conception, it is plain, will not fit the facts of cognition on any intelligible hypothesis. Even if the synthetic process is always hidden from the mind, the process itself must always be guided by apprehension of the object at every stage of its development. The workman may not know how he works, but he must perceive the imprint of his hammer at every blow. Accordingly, the products in question cannot always be finished articles. To call them products merely implies that they are apprehended. To call them mental, again, need not imply the *cul-de-sac* of subjective idealism. They need not be the products of a finite mind. If they are indeed the results of synthesis, this synthesis need not be supposed to be a sort of cottage industry

that lets the great world go by. Nothing in general theory (though much in the detail of many of the arguments used) stands in the way of the hypothesis that all cognitive synthesis is the movement of a cosmic machinery, however fragmentary and subjective the results may appear to be.

These explanations may help to remove the suspicion that a considerable part of this discussion deals with effigies only. In any case it is necessary to proceed, and the brief statement of a very familiar line of argument is, perhaps, the best introduction to the problems which have been indicated. The objects of apprehension (so this argument runs) always imply constructive synthesis. Without synthesis, an object would be identical with the given, and the given is either an unrelated unit or a mere conjunction. The denial of synthesis, then, involves a palpable absurdity, since an object must have unity or meaning to be apprehensible at all. Synthesis, then, is a precondition of the possibility of apprehension, and apprehension, in its turn, is a species of consciousness, and not a residuum of bare sciousness in the presence of meaningless data. Moreover, consciousness implies self-consciousness. The unifying synthesis of the self as a whole (or, at least, of the cognitive self) is written on all apprehended objects, and these objects, accordingly, have an altogether unique form.

Each step in this elaborate argument needs critical consideration.

The first step depends upon an arbitrary restriction of the given which has already been criticised in passing. This restriction, in a word, is a mere *petitio*. Anything which is apprehended is therefore given. If it were not, a transcendental proof, like the one now considered would be meaningless, since the proof states that synthesis must be admitted, because objects are always given as unities. There is no need, then, to interpret the given as mere immediacy, or as a punctual unit without a context, or as a primitive shock of feeling of the kind which some ultra-traducian might ascribe to the soul of a

pre-Adamite embryo. To argue that the given must be pre-relational identifies it, in the first place, with the hypothetical presentations of a rudimentary mind, and implies, in the second place, that the development of cognition consists in separating and reconstructing this raw material. This second implication clearly begs the question, and the first is not a consequence of the continuity of development. Even if development, *per impossibile*, implied preformation, it is surely just as legitimate to argue from the later to the earlier as to follow the reverse order. It is also much less speculative.

The argument that the given must be unrelated begs the question just as dogmatically. Its plausibility, if it has any, is due to the peculiar haze, half cloud and half halo, with which so many philosophers have chosen to enshroud relations. In terms of these misty speculations, relations are supposed to be the work of the mind in some peculiar and distinctive sense, so that they are either superadded to things by the mind—and how could a thing have any meaning without relations?—or else there are no things at all, and the whole universe, to choose the least sceptical alternative, is God's way of relating a relationless manifold, with or without our co-operation, and with or without a recalcitrant hull of contingency in the manifold itself. An exception, it is true, is sometimes made, grudgingly and inconsistently, in favour of some relations, and in accordance with this concession certain relations of spatio-temporal conjunction, and the analytic relations in which the predicate is either contained in the subject or identical with it, are admitted to be merely given to the mind. This concession, however, is as valueless as it is intended to be, since the former type of relation can yield nothing more adequate than a dead associationism, and the latter, on the most favourable interpretation, is the basis of a barren logistic only.

On these assumptions, it is inevitable to conclude that any unity other than a merely analytic one or than a unity of mere conjunction (if that be worthy of the dignified name of unity)

is due to the synthetic activity of the mind, but the fundamental premiss that relations are peculiarly mental does not seem capable of withstanding criticism. How can there be any good reason for discriminating between terms and relations in respect of givenness, objectivity or the influence of the mind? Logically regarded, relations are as incorrigibly objective as any of the other constituents of a proposition. Psychologically regarded, they are discovered through the process of comparison, and the results of comparison must surely be accepted in precisely the same sense as the terms compared. To say that relations are elicited does not change the issue. Relations are elicited because they are found, and the problem is not appreciably affected when the relations holding of a long series of terms are considered instead of those discovered in comparing a few terms. Indeed, the only reason why relations should even appear not to be given seems to be the freedom of the mind in selecting objects for comparison. This freedom of selection, however (as the pragmatists persistently neglect to notice), implies no sort or degree of freedom once the selection has been made. Thus neither logic nor psychology warrants the ascription of a specifically mental status to relations. Before and after, right and left, are presented with the same objectivity as blue or sweet; equality is contemplated by the mind in precisely the same sense as number; and if moral superiority is constructed by the mind, so is the quality of righteousness.

If, then, relations may be given as well as terms, there is no good ground for denying that complexes of related terms (*i.e.*, unities) may also be given, and this result leads to the second step in the transcendental argument under consideration. Granting that the mind, *de facto*, is always confronted with a unity and with meaning, what can be inferred from this circumstance?

A moment's reflection shows that one line of argument, not infrequently used, must be abandoned altogether. On the surface it is plausible to contend that although the discovery of

a unity proves nothing except that a unity has been found, still this unity must have been put together, and that the construction of it is the essence of any cognitive process. It is clear, however, that this argument has no weight at all. To say that a unity cannot be, unless it has been made, has no better warrant than the more general statement that nothing can be, unless it has been made; and even the most simple-minded country parson would hesitate to use this argument in his expositions of the Book of Genesis. This argument must, therefore, be put in a more defensible form, and would probably be changed into the more moderate doctrine that any unity which we discover has, in fact, been made by us.

Even the most impersonal presentation of the most abstract arguments, we may be told, always shows unmistakeable traces of a finite personality. John Bernouilli, according to the story,* recognised "the lion by his claws" when he saw Newton's unsigned solution of a mathematical problem, and this adaptation of the maxim "*ex ungue leonem*" may be extended in principle to all apprehended objects. Personal idiosyncrasies pervade the most impersonal discoveries, and we are forced to conclude that any unity apprehended is tinged at some point or in some degree with the reflection of a finite personality. The matter of fact, of course, is manifest in perception and imagination. This illustration, we may be told, shows that it is also manifest in the apprehension of universals. No doubt, the way in which this tang of personality may be recognised in any given instance is another matter. Sometimes it appears in illustrations and analogies, sometimes in a trick of phrase. Among mathematicians it may be seen, let us say, in the preference for a geometrical proof where other proofs are possible, and some lions may be recognised by their claws because there may be only one lion alive at the time whose claws could reach so far and grasp so tenaciously. But some

* *Cf.* Lynch, *Proc. Arist. Soc.*, 1917–18, p. 597 *n.*

clues to its recognition are always present, whatever these clues may be.

The detailed mention of these clues, however, seems to give the case away. In such cases it ought not to be difficult to discriminate between the personal and the impersonal elements in the object as a whole. Bernouilli, we may reasonably assume, could have done so in this particular instance, and it is permissible to suggest, on the lines of previous argument, that such discrimination is not impossible even in the case of perceived wholes, or in the riotous extravaganzas of a Bacchantic imagination. Of course, the admission that some apprehended wholes, or some discernible parts of these, are impersonal, does not show of itself that they are non-mental or non-spiritual. The point is that from the premiss that the object of apprehension is always a unity nothing whatever can be inferred concerning the important question whether such objects are or are not always the products of synthesis, always mental, always non-mental, or sometimes the one and sometimes the other. The principle of the contrary thesis merely assumes the point in dispute. If, *e.g.*, any unity is therefore a spiritual unity, or any logical connexion "continuous with mind" (whatever that may mean), then *cadit questio*. The only perplexing circumstance in the case would be the odd language which uses one and the same expression to describe both the connexions of a logical system, and these curious little centres of whims, dreams, and anxieties which we call minds. However that may be, it is needless to pursue the argument. The question has been settled in advance—by definition—and it may be left thus defined.

The reference to "meaning," however, is very important, and requires detailed discussion. Sometimes, it is true, when "meaning" is mentioned, unity seems to be meant. These two, however, are not the same. Unity is just unity. There is unity in a potato, and, what is more, organic unity; but such unity is not meaning. Meaning, properly speaking, implies the

relation of sign to thing signified, and the apprehension of meaning implies the recognition that a sign is a sign. Accordingly, when it is said that the object of apprehension is always a meaning or always contains meaning a somewhat intricate analysis of the relation of sign to thing signified is required before the value of the argument can be duly appraised.

What, then, is this relation? A sign, of course, stands for, or represents, the thing it signifies; but that is only repeating the same tale in different words. It is no explanation. A more helpful suggestion is that a sign is always some sort of equivalent for the thing it signifies. This equivalence is not merely the fact of substitution, but also, and more importantly, the condition which makes substitution legitimate. The ultimate condition in the case is that a part of a related complex is the equivalent of the whole complex.

It does not seem possible to carry this analysis further, at any rate so long as the mind is left out of account. In particular, the equivalence in question varies so much in different cases that the attempt to define it, so to speak, in less skeletal terms, is bound to fail. A sign, it is true, may resemble the thing it signifies, as when a statue resembles its original or the opening bars of a melody resemble the whole melody. Such resemblance is agreement, partly in sensuous detail, partly in type of relationship. Again, the equivalence between sign and thing signified may be distinctly logical. A universal, for example, is the equivalent of a host of particulars, and may be taken as their representative. These two cases have, perhaps, more in common than the very general relation of whole and part, but it is hard to see how this additional common element, if there is one, could belong to the most familiar kind of significant equivalents, *i.e.*, words. Even if it be granted that grammatical relationships often throw light on logical connexion (and a teacher of logic can scarcely deny the fact despite the abuse this admission brings on his head), words themselves do not usually resemble the things they signify

either logically or by onomatopoeia. The magnificent polysyllables Theophrastus Bombast von Hohenheim (or even their Latin equivalent Paracelsus) may, indeed, seem appropriate to some of the speculations commonly ascribed to that celebrated alchemist. But that is an accident of association, and the sound America does not resemble a continent any more than the sound Vespucci. Its significance is learned in a complex of mere temporal conjunction. The sound "America" is heard when the continent is thought of, and is subsequently used as an equivalent for the continent, subject to the conditions of linguistic convention.

These explanations may seem to be little more than elaborate admissions that it is absurd to try to analyse meaning without reference to the mind; and that conclusion, in its turn, appears to be tolerably obvious of itself. Nothing more than common sense is needed to show that things are what they are. And what they are is never what they signify. Signs are necessarily for a mind, and with the admission of this truism common sense seems to be delivered into the hands of the idealists. For everything apprehended has a meaning, nay, is a meaning. If, then, a meaning must be for a mind, everything apprehended or apprehensible must be for a mind, and anything not apprehensible is nothing in relation to us.

Since this conclusion is important, it is worth while pursuing the analysis of meaning with a view to discovering whether it is logically impossible to maintain that a non-mental object may be discovered as it is in itself, granting the premises that meaning is only for a mind, and that nothing can be apprehended unless it has meaning.

How does the mind enter into meaning? The simplest answer to this question would appear to be that meaning is always an affair of suggestion, and that suggestibility is plainly an exclusively mental attribute. This answer, however, even if it be accepted so far as it goes, does not tell in favour of idealism. The answer states that an object X has meaning

when and only when it suggests another object Y. In that case, the assertion that X is apprehended as having the meaning Y is another way of saying that the mind, because it apprehends X, is led to apprehend Y also. This statement clearly does not imply that neither X nor Y is apprehended. On the contrary, it expressly admits that they are apprehended, and promulgates, in addition, a psychological law of the mind to the effect that the thought of X leads to the thought of Y. How, then, is there any difference in principle when the further consideration is adduced that no object is ever apprehended in isolation, but always with a meaning? This consideration is equivalent to the statement that whatever is apprehended is apprehended along with something else which it suggests. In any given instance, therefore, the total object of apprehension is never X *simpliciter* but X-along-with-Y or along-with-Z, or along with anything else which X may signify in some particular context. The facts so stated surely do not imply that neither X, nor Y, nor Z is apprehended, or that X, Y, and Z must be mental, any more than in the former case. It follows that if meaning is interpreted as the fact of psychological suggestion, it must be for a mind, and yet the idealistic conclusion is not a consequence.

This argument may seem to need qualification in three respects. In the first place, when signs are explicitly apprehended it is comparatively rare for the things they signify to be apprehended also. Plainly, if this were not so, the use of signs, instead of being convenient would be only a luxury. The sign, as we have seen, is an equivalent for the whole complex of which it is part. If, then, it suggested the whole complex with the same explicitness as its explicit self, there would be no advantage in the use of signs. And it is clear that the objects before the mind are often nothing but symbols. Mathematical symbols, for example, may be capable of translation into terms, let us say, of pure logic; and the power of making this translation, in some degree at least, may be admitted to be

a precondition of any mathematical reasoning. But in the detail of the reasoning the symbols are often considered for their own sakes, and only the result is translated, if, indeed, it is translated at all. Similarly, pounds, shillings, and pence are symbols of very complicated economic conditions, but although a grocer attends to these symbols when he counts the change for a customer, it can scarcely be contended that he apprehends these economic conditions at the time he is counting the change, even to the extent to which he would understand them if he gave his mind to the problem.

Even Hume, thorough-going associationist as he was, did not maintain that the function of a sign consists in the full reinstatement of an associated presentation. The kernel of his theory was that significance consists in the tendency to recall or to arouse various groups or trains of associated presentations under varying conditions, and that the facts of the case are best appreciated when all these dispositions are baulked by the use of signs in some wholly impossible or wholly strange connexion. On this theory, meaning would be a kind of incipient suggestion; and this view certainly comes nearer to the psychological facts. When we see a huntsman taking a fence, and say, "There's another," it is not necessary that any other scarlet-coated figure should be presented to our minds than the one we perceive at the moment. All that we may apprehend is a solitary figure together with the knowledge that this figure is a member of a series. It is true that there always is a tendency to recall the earlier members of a series, and that, in all probability, we should recall them if we let our minds linger on the matter. But frequently we do not do so.

The facts in these and similar cases are, on the whole, adequately described in the elaborate accounts of the "fringe" of consciousness which have now become so familiar. The thought of a speaker, for instance, whether on the platform or in ordinary conversation, usually runs ahead of the words he uses. He has a schematic apprehension of the form or plan of

the things and concepts which he intends to indicate during the course of his remarks, but the plan which he follows is not apprehended in specific detail, even in the way of imagery. It may, indeed, be so schematic, so general in a pre-logical sense, that it can scarcely be described at all. In these cases, as on Hume's theory, the nature of the facts is best appreciated when the mind's comprehension of the plan is baulked or suddenly diverted, and this phenomenon is seen most clearly in the sudden and unexpected contrasts which belong to the essence of every witticism. There is some comfort in the reflection that psychologists have so much to learn from the helpless perplexity and the mechanical smile of the solemn man who has unintentionally said something funny; and the correlative circumstance that a joke is always spoiled when it is explained may be a solace to those who are not psychologists.

These facts are very important for descriptive psychology, but they do not affect the epistemological argument under discussion. They show that four possible cases arise. In the first place, when X means Y, X and Y may both be apprehended explicitly. In the second place, X may be apprehended explicitly and Y schematically. In the third place, Y may not be apprehended at all, and the total object of apprehension may be X together with the relation which would be seen to specify Y, if Y were apprehended. In the fourth place, X might possibly be apprehended by itself. In this last case X might have some meaning, though not a Y-meaning; but this case may be dismissed since a sign considered without any reference to its significance is only a sign potentially. The other cases all occur, the second being most usual. None of them, however supports the idealist's case. The form of an object, or of a series of objects, has the same status, epistemologically, as the details; and a relation apprehended without the term which it signifies, is apprehended in the same sense as occurs when the term which it signifies is also given.

The second qualification which may be supposed to be

necessary does not need more than the briefest possible mention. Signs, it is said, are usually neglected in favour of what they signify. The printed marks on a page, for instance, cease to be significant (and, indeed, look very odd) when we turn our attention to their specific form or shape. These facts, however, introduce no fresh complication of principle. If it could be contended that these neglected signs are not apprehended at all, it is clear that this contingency would be the precise converse of the third case mentioned above. Instead of X being given together with its specifying relation and without Y, we should be given Y as specified by a certain relation and without X. A neglected sign, on the other hand, cannot be neglected so utterly that it is not apprehended at all, and consequently the case mentioned is really the precise converse of the second possibility considered in the preceding paragraph. From the epistemological standpoint the same arguments apply to the converse of any of the foregoing possibilities as to the convertend.

The third qualification sometimes adduced appears to be more important than the others. An illustration will show what is meant. Suppose, for instance (as in Pawlow's experiments), that the flow of a dog's saliva increases when he hears the sound of a dinner-gong. It is possible, of course, that a satisfactory explanation of this reaction might be given in merely neural terms, but it is much more likely that the sound of the gong, after much experience, leads the dog, as we say, to think of his dinner, and that the thought of the dinner makes the dog's mouth water. It does not follow, however, that in this case the dog recognises the sound of the gong to be a sign of his dinner. The process might be one of simple suggestion without recognition of meaning. The sound, in other words, need not be a sign of dinner to the dog, merely because it suggests dinner to him. The sound *means* dinner only if the dog consciously apprehends it as a sign.

It is necessary, then, to distinguish carefully between the

suggestiveness of a sign, and the logical conditions of the use of signs. The mere fact that the mind is led to pass from one particular object to another is not by itself signification. Significance also implies that the sign must be apprehended as being the equivalent, in some respect, of the thing it signifies. Nothing is used as a sign unless this equivalence is recognised. But if a sign is recognised as an equivalent, it must really be an equivalent, and the recognition of anything for what it is cannot alter it. Thus the fact that a sign must be recognised as such does not affect the theory of apprehension in principle.

These inquiries point definitely to a conclusion which may be stated briefly as follows: The general analysis of the form and structure of the objects of consciousness does not show that such objects must be mental products either because they are unities or because they have meaning. Productive synthesis, therefore, is not necessarily a precondition of the possibility of knowledge. If, and so far as, synthesis is implied, this synthesis appears to mean connexion on the side of the object, and to mean on the side of the mind such faculties as selection, memory, and the like, which are implied in the apprehension of a connected complex. Mental apprehension always takes place under temporal conditions, and there are also spatial restrictions to be considered in sense perception and (derivatively) in imaging. It is not surprising, therefore, that the object *de facto* before the mind in any given instance should always have a peculiar and, it may be, a personal form. As we have seen, this may even be the case with regard to the apprehension of universals in a logically ordered series, although, in this instance, the spatio-temporal limitations of the mind are at a minimum. Arguments based on these considerations, however, are always consistent with the theory that such series really are objective, that the members in the series may be discriminated in and for themselves, although they may not be apprehensible in isolation, and that the "advance of the personal" into this domain can itself be discerned and allowed

for. Sometimes, indeed, it may be very difficult to discount the personal equation, and quite impossible to eliminate it, but the frankest possible admission of this type of difficulty cannot prove that it is always insuperable. Similar arguments apply to any impersonal mental equation which may be shown to be relevant.

Speaking generally, the most that could conceivably be proved by arguments of this kind is that the mind is always restricted to the discovery of a certain type of objective fact, that there may be unknowable types of objectivity, and that there is a danger of *suggestio falsi* in all thinking since we say unhesitatingly that reality is so-and-so when, perhaps, we ought to say only that the fragment of reality which is discoverable is so-and-so. If, however, any single connexion can be truly discovered, there need not be any *suggestio falsi* in accepting the discovery, and the unknowable is harmless provided that it does not logically affect the known. On any theory the mind cannot grasp more than is revealed to it. It has to take what it can find. The important question is whether it ought to be so diffident as either to accept nothing, or else to make its acceptance always subject to unknown qualifications. The above argument has striven to show that neither of these courses is logically required.

If these contentions are sound, it is plain that they are not affected in principle by any proof based upon the complexity, in fact, of all apprehended objects. Thus, even if all consciousness is self-consciousness, in the sense that all the categories are somehow present as a unity in all apprehended objects, there is no need to modify these arguments, and with this explanation we may pass to some further considerations.

These reflections are not presented as proofs that any of the objects of mind are not mental. They are only intended to disprove some of the arguments which contend that these objects must be mental, or must be synthetic products. As a matter of course, then, they should not be taken to imply the

more radical doctrine that no objects contemplated are mental products, and it seems to be plain that some objects at least (*e.g.*, some images) are mental products, and that they are woven together in a loom of most psychological synthesis. It is necessary, however, to safeguard the views stated above from some of the consequences which are falsely supposed to follow from this admission, and especially from those consequences which are deduced from the function of images in thinking. In many accounts of the thinking process images are supposed to be all-important. Some well-known arguments, indeed, would seem to imply, if they were explicitly stated in their extreme form, that the existence of representative images is *eo ipso* thinking, and that the organisation of these images in respect of their logical content is either the whole or the essence of any piece of knowledge. This doctrine deserves somewhat closer consideration than it has already received in this discussion.

The previous argument, it is true, has revealed many vulnerable joints in its armour. In the first place, it is impossible that all knowledge could consist in the manipulation of representative signs, since the basis of significance is the fact that a sign really is, and really is known to be, an equivalent for the thing signified; and although the thing signified may not appear directly before the mind in many thinking processes, it must be directly apprehended in some cases if it is ever possible to know that any sign is significant. In the second place, as has been abundantly shown, the mere existence of an image which is, in certain respects, the equivalent of a percept or of a universal, is not identical either with the apprehension of this image or with the recognition of its significance, even granting that images are entities wholly mental, and that they cannot exist without *also* being apprehended. In addition to these general arguments, however, which apply to all knowable objects, some more specific arguments seem to be required with regard to images and to their cognitive function.

An image is most literally the equivalent of a percept, since it has the same sort of stuff in it and the same sort of form. This literal equivalence, indeed, is so marked as to suggest strongly that many so-called images, particularly memory-images, are really percepts cut off from the moorings in which they were originally apprehended, and with some of their characteristics neglected or forgotten. Such a theory, however, will not account for many imaginative constructions, and it may be granted that we produce images as well as find them. There is no contradiction in this. We produce sounds as well as hear them. Indeed, we hear them the better if we are also able to produce them, and these facts of perception may be extended to imagery. We may, for example, produce coloured shapes as well as see them in visual perception, even granting (as is by no means certain) that the same bodily organ would have to perform both functions in this case, whereas different bodily organs were employed in the former instance. However that may be, the more important question concerning images is that of their place and function in conceptual thinking. According to the accepted descriptions, imagery, in some form, usually, and perhaps always, accompanies thinking (which is another way of saying that whenever we think of universals we also think of images). This fact can scarcely be an accident, and there is good ground for believing that the apprehension of a particular image guides us in the apprehension of a specific universal or set of universals, and that we tend reciprocally to produce or to discover anew this or the other image whenever we think of some determinate universal.

The question of greatest moment, however, is whether universality consists in a certain use, or function, or aspect of imagery. If that were so, the whole range of cognition would be affected, since all meaning, even in sense perception, has a universal reference. It is sometimes supposed, then, that universals are abstractions from images, apparently in the sense that they are literally extracted from the images, and this view,

though seldom explicitly maintained nowadays, has still considerable influence in attenuated forms. It is necessary to point out, therefore, that this psychological feat is utterly impossible except, perhaps, in a few insignificant cases, and that, if it could be performed, it would have no logical importance. The fact surely is that this process of desiccating or etherealising the particular is totally irrelevant to the problem of the relation between universal and particular. A part of a particular is just as particular as the whole particular from which it is extracted, and the most concrete object may signify just as well as the most disembowelled of images. It need not be imaged snow that represents purity, or imaged stars that represent sublimity, or an imaged grocer that represents "an availability" and the laws of economic demand. The snow that covers the fields, the stars that guide the mariner, and the whiskered and aproned grocer are just as efficient representatives. If this be disputed, it is well to remember that printed words are not images, that spoken words are actually heard and that what is mistakenly called "verbal imagery" is actually articulated. No doubt, in the order of origin, the apprehension of the same thing in different contexts is needed before the explicit apprehension of universals becomes possible, but even if some amalgam or residuum of the original percepts came to form an image, this product would have no particular importance. The blending of all colours would presumably result in a dirty white, but dirty white, imaged or perceived, is not a more fitting representative of the universal "colour" than a corona, or a rainbow, or the purple shadows on the Lake of Geneva.

Thus, even if it be true, that no thinking and no apprehension takes place without imagery, it is simply not the fact that imagery is intrinsically required for thinking, still less that all thinking and all apprehending is a manipulation, or a function, or an aspect, of imagery. The phrase "connexion of content" is somewhat misleading in the literature on this subject. The

"content" of a presentation, one would suppose, is just the totality of its parts. If the presentation, then, is particular, so are its parts, and the concrete parts of a particular presentation are related to universals in the same way as the whole presentation. The universal itself is never contained in the particular although it seems to be true that no universal is apprehended except in relation to, or at least along with, some particular, and that no particular is apprehended without relation to a universal. Of course, universals are "contents" in the sense that they are apprehended, but nothing in the above analysis suggests that they are mental contents or produced by the mind. Mistaken views are very likely to arise, however, if the "contents" which are relevant to thinking are always supposed to be images, for then it is plausible to argue that the "contents" are both particular and universal, both concrete and abstract, both subjective and objective, and to interpret them in any one of these aspects as convenience serves.

Universality, then, is not so blended with imagery that the former is in any way logically dependent on the latter, and the supposed mental status of images or of the products of synthetic imagination is relevant only to some of the problems of knowledge and not to the whole range of cognition through universals. Many idealistic arguments concerning universals, however, would seem, ultimately, to be independent of this assumption (even granting that the statements of them have an illogical preference for illustrations culled from imagery), and some of these arguments, if they could be accepted, would certainly prove that knowledge is primarily synthesis. The most important argument of this kind runs somewhat as follows. Careful reflection shows that what we call the knowledge of an object is really a process of synthesis, and ultimately nothing else. For apprehension always takes place through universals, and all universals are dynamic. A universal is a *nisus* towards all-inclusive unity, and it exists in virtue of its participation in the active self-maintenance of reality as a

whole. To be known is just to be incorporated in this effort of the universal.

This argument is frequently stated as if it were a plain description of human experience in knowledge, or at any rate a description of that experience taken at its highest stretch. It is doubtful, however, whether this claim to be simply descriptive would ever be made if the argument were not also supposed to rest securely on an unassailable basis of metaphysics. Certainly, most presentations of the theory invoke metaphysical support, and would be impotent without the assumptions that knowledge and its objects must ultimately be the same thing differently regarded, and that reality must be a whole of Experience, metaphysically perfect, in which cognitive experience has a place simply and solely because the whole of Experience requires this part as a necessary constituent of its being. These assumptions have been denied, either expressly or by implication, during the whole discussion in this paper, and they cannot now be accepted. Criticism, therefore, seems out of place, and a *via media* unattainable. Some doctrines must remain permanently in opposition, and the only feasible course is to try to discover how much and in what way an alternative theory is able to accept this alleged description of the facts.

Here it is possible to offer a suggestion at least. The facts described as a *nisus* towards unity, or a craving for completeness may be simply facts of the mind. There can be no doubt that the desire for the progressive discovery of unity in things is the principal impulse of many minds in many inquiries, and this desire, speaking generally, is satisfied more than sufficiently to prevent its death from inanition, and is never sated unless through weariness or incapacity. The desire, however, should not crave for a greater degree of unity than actually prevails, and although no limits can be set in advance to the extent and to the intimacy of this unity, it is plain that the attempt to discover unity ought to be subject to the conditions that no

relevant fact which has been discovered dare be neglected, even if it does not tally with some preconceived scheme of unity, and that nothing must be introduced into the object apprehended which does not belong to that object. It is not the making of a unity that matters, but the finding of the unity which is present, in whatever measure it is present. It is beyond question that the facts apprehended have some unity. They must have logical unity at least; and, although this is more doubtful, they appear also to have a unity which is more than merely logical. The goal of the mind in scientific and philosophical researches is the discovery of unity, and particularly the unity of ordered series, because it is only through this type of discovery that the mind can grasp a multitude of particulars, and thus obtain a sense of power in its comprehension of phenomena. From this standpoint, it is irrelevant whether the unity of series is as important in reality as it is for thought. It is enough if any unity is actually discovered, for in that case the mind really has discovered a truth, and its sense of power has a genuine basis in so far forth. Thus the movement of the mind, when it is intent upon knowledge, is through universals, and the mind, when apprehending universals, has always a tendency to think of the particulars of which they hold; indeed, these particulars often seem to surge before it as if the universal itself summoned and maintained them. This last description, however, is only metaphorical, and need not be interpreted otherwise than as a fact of psychology, whether that psychology be individual or super-individual. The thought of the universal may crave, summon, or maintain the thoughts of particulars, but the universal itself neither craves, summons, nor maintains. It simply holds. And the particulars, for their part, crave only in the case in which they happen to be cravings. Since they exist, they do not also require to be maintained.

I have set myself a very limited aim in this paper. Instead of trying to establish a definite set of conclusions by a chain of

consecutive reasoning I have attempted the less ambitious task of stating and considering some of the most important arguments which seem to me to be relevant to the issue, and to suggest conclusions on some particular points. A formal summary of the discussion is therefore less necessary than in most philosophical essays, and I do not propose to give one. It will be better, I think, if, greatly daring, I state my own private opinion, not because I claim to have established its truth or because I feel no diffidence concerning it, but because I am certain to have assumed it frequently in unsuspected places, and because an explanation of this kind may help to make my mistakes clearer to others, and so may be of some little service.

I have tried to show that knowledge cannot consist of synthesis and nothing else, that it cannot be divided into synthetic and non-synthetic varieties in terms of the current psychological divisions into perceiving, imagining and the like, and that the suggestion that all knowledge contains synthetic and receptive elements blended together in indissoluble union is not helpful. These results, if they are correct, limit the issue very much, and they tend, *pro tanto*, to support the view that knowledge consists in direct apprehension or discovery of the given. One possible way of interpreting this thesis was considered at an early stage of this discussion. The suggestion there considered was that all the activities of the cognitive mind (and therefore all cognitive syntheses) are merely instrumental to simple discovery or direct inspection. It seemed possible to defend this thesis, though with difficulty, against some of the objections which might be brought against it; and the problem was left there. Subsequent discussion, however, showed abundantly that if the activities of the mind are instrumental to discovery their instrumentality cannot be limited to attentive adjustment with a view to mere inspection. There are symbolic constructions relevant to knowledge.

The clearest example is the case of words. The intelligent

construction of a sentence may fairly be said to be due to mental activity although words themselves are physical noises produced by physical means. No doubt we have to find the right words (if we can) to express our meaning, but it would scarcely be enlightening to argue that the words in every poem, and every scientific treatise, and every remark made by a patient in delirium, are merely found, or that they are merely selections from infinite pre-existing combination of sounds. Some constructions, then, are instrumental to some thinking, and the principles implied in the analysis of thinking aided by the use of words also hold good, *mutatis mutandis*, for thinking aided by other symbolic constructions.

It is true that much that is called synthesis may be simple finding. The discovery of logical relations, for example, need not be otherwise interpreted in most instances. On the other hand, many symbolic constructions seem to be literally put together by the mind, or by the body directed by the mind. When that occurs the mind must directly apprehend what it has put together. Sometimes it rests there, as, for example, when we apprehend a mathematical construction without considering its further reference, or treat a romance as a simple narrative. But the importance of symbolic construction for knowledge (as distinct from the interest or beauty of such constructions) consists in the fact that the construction signifies something beyond itself. The objects so indicated may or may not be themselves directly apprehensible. When they are not directly apprehensible they can be known through their representatives only, and in that case it is better to keep to the constructions so far as possible, and not even to infer corresponding entities. On the other hand, this indirect knowledge through representative constructions logically requires that the significance of representation itself should be based upon direct acquaintance with sign, thing signified, and their relation.

In principle, there may be direct acquaintance with any finite

entity, mental or non-mental, universal or particular, and if any finite entity, in point of fact, cannot be directly apprehended in and for itself, the reason does not lie in the intrinsic incapacity of knowledge. Infinites, it is true, cannot be directly apprehended, but the universals which define them may be. The principal difficulties in the whole subject arise from three circumstances. In the first place, the total object before the mind at any time is very complex, and the discovery of any objective characteristic must consist in a process of discrimination within this complexity. In the second place, the discovery of non-mental characteristics is complicated by the circumstance that there are grounds for believing that certain mental products always form part of the total object before the mind at any time, and that the discrimination of mental from non-mental is always difficult and sometimes impossible. The so-called "tertiary qualities," and some of the facts of perception already cited, are good illustrations. This type of difficulty, I have argued, is not insuperable in all cases, either with regard to all sensible qualities or to all universals. In the third place, it is possible that some representative constructions (*e.g.*, words) are always part of the total fact presented to the mind. If so, the representative and the non-representative parts of this fact must be discriminated one from the other, and this should not be impossible since the mind is directly acquainted with both.

Meeting of the Aristotelian Society, at 22, Albemarle Street, London, on January 6th, 1919, at 8 p.m.

IV.—MECHANICAL EXPLANATION AND ITS ALTERNATIVES.

By C. D. Broad.

§ 1. The controversy which has long raged as to the applicability, or, at any rate, the adequacy, of mechanical explanations to biology still continues and seems likely to be always with us. Evidently, to settle it two questions must be answered: (i) What precisely do we mean by a mechanical explanation and how do we suppose it to differ from any alternative kind of explanation? and (ii) Can the phenomena dealt with by biologists be fully accounted for mechanically in the sense defined? To answer the second question profound knowledge of the details of biology would be needed, and such knowledge I make no claim to possess. But it is perfectly useless even for the most eminent biologist to attempt to answer the second question till he and his opponents have agreed on their answer to the first. Now the first question is very largely a logical and philosophical one; no doubt to deal with it adequately a knowledge of the special sciences is also needed, but a mere knowledge of the special science of biology without any philosophical or physical training is a very slender equipment for meeting the difficulties involved in the problem.

§ 2. I have two main complaints to make against most of the discussions between mechanists and their opponents with which I am acquainted. First and foremost, the combatants all assume that everyone is agreed as to what is meant by a mechanical explanation, and, presumably in consequence of this assumption, never condescend to inform the reader what *they* in particular mean by it. I strongly suspect that this belief in a general agreement indicates nothing but a general haziness.

Secondly, it strikes me as strange and unfortunate that the controversy should always be conducted about biology in particular. One is tempted at once to ask: Why biology? Is the accepted, but carefully concealed, definition of mechanical explanation such that no one but a lunatic would suggest of any other science, say chemistry, that mechanical explanation may be inadequate to its subject matter? To confine the question to biological ground is not merely, on the face of it, strange and unwarranted, it is really misleading. Biology is not a particularly advanced science compared with physics and chemistry; it has discovered few general laws as yet, and none, I imagine, of the same range and certainty as those of gravitation or constant proportions. Hence, by confining the question to biology, the opponent of the adequacy of mechanical explanation needlessly prejudices his own case. He lays himself open to two alternative retorts. One sect of mechanists will tell him that the problems of biology are evidently so complex that, even if many biological facts can be produced of which no satisfactory mechanical explanation has been given, this offers hardly the least presumption that no such explanation is possible. Another sect of mechanists will tell him that he may learn from the state of his own study that where mechanical explanation stops there science stops also. Now suppose that, instead of confining the question to biology, we had propounded it about chemistry. And suppose, for the sake of argument, that we had found that, when *mechanical* is defined in an intelligible and acceptable way, some facts of chemistry are not susceptible of complete mechanical explanation. The second objection would now be useless. Chemistry undoubtedly is a science with definite laws of great certainty and wide range Hence, if it be incapable of complete mechanical explanation, we can see at once that science does not end where the possibility of mechanical explanation stops. The first objection would not indeed vanish, but it would lose much of its force, and it would be a problem to see how much force it had left. For

undoubtedly much of its appeal to scientists comes from their combining the two propositions (*a*) all regions of phenomena are susceptible of scientific treatment, and (*b*) nothing is susceptible of scientific treatment unless it be capable of mechanical explanation. With the downfall of the second of these premises this particular argument would collapse, and it is doubtful how much solid reason would remain for the view that when a subject *appears* to be incapable of complete mechanical explanation this appearance is *always* an illusion due to the complexity of the phenomena.

If there be anything novel in the following discussion it consists in the fact that I am concerned rather to define mechanical explanation, and see what are the alternatives to it, than to discuss whether some particular region of phenomena, such as biology, be mechanically explicable, and in the fact that I shall try to take illustrations rather from chemistry and physics than from biology.

§ 3. An explanation of any phenomenon always involves two factors:—general laws and a specified set of entities subject to these laws. For what is to be explained is a definite particular state of affairs, and you cannot explain this merely by a set of general laws. Of course the set of phenomena to be explained may be more or less general; you may, *e.g.*, wish to explain reproduction in general, and not that of camels in particular. In proportion as the phenomena to be explained are general so will the specifying features of the entities involved in the explanation be general. But the phenomena dealt with by a given science will always be considerably specialised or they could not fall under a single science. And so the entities involved in an explanation will always be more or less specialised as compared with the general laws employed. To put the matter in a different and probably more satisfactory way, laws assert correlations between attributes. What has to be explained is some more or less specialised instances of correlated attributes. Laws alone will not explain this; one

specialised instance can only be explained in accordance with a general law by another specialised instance.

If this be true of explanation in general, there will be two questions about mechanical explanations in particular: (i) What is the peculiar nature of the entities employed in them? and (ii) What is the peculiar nature of the laws? Of course these two questions are never completely independent, since one important characteristic of the entities is that they are the kind of entities mentioned in the laws.

§ 4. It seems plausible to suppose that it is a necessary condition of a mechanical explanation that the laws employed shall be those of Mechanics, *i.e.*, Newton's three laws of motion or some substitutes for them. The characteristic peculiarities of mechanical explanation will therefore depend on the special character of the laws of motion, and of the entities presupposed by them. We must therefore begin by asking ourselves what are the special characteristics of the laws of motion. I do not think we need trouble ourselves here with the question as to what is meant by space and time as used in the laws of motion. This question is of the utmost importance in a special study of the philosophy of mechanics, but it is not so important here because any difficulty or obscurity about space and time in mechanical explanation would be equally present in any alternative kind of explanation, since all would presumably use these concepts.

The fact is that questions about absolute *v.* relative position or motion, the precise meaning of simultaneity, etc., appear to be peculiar to mechanics and electrodynamics, not because other sciences do not use these notions, but because they have used them without that resolute attempt to clear up their obscurities which physicists have had to undertake. All alternative kinds of explanation use the space and time of mechanics, whatever that may be, and what characterises mechanics as regards these concepts is not the fact that it employs them, but that it tries to be clear about their implications. I shall,

therefore, simply refer to the space and time of mechanics as the dynamical reference system without discussing the precise nature of this system, and shall assume that this is what other natural sciences have in mind when they talk about space and time, position and motion. I think we can make this assumption without unfairly prejudging the case even of Bergsonians, for their "duration," so as far as I can see, is not a new and different kind of time, but an alleged property of what exists in time in the dynamical sense.

§ 5. To state the characteristic features of the laws of motion, it seems best to express them in the concentrated form of Lagrange's equations. We are here much nearer to laws in terms of quantities that can actually be observed and measured than when we express the laws in terms of particles, which are, of course, pure mathematical fictions. Lagrange's equations for a system, as everyone knows, are in terms of generalised co-ordinates, *i.e.*, measurable magnitudes which between them fix the position and configuration of the system at a given moment. Let us denote them by the letters $q_1 \ldots q_n$. Then Lagrange's equations for the system consist of n simultaneous differential equations of the form

$$\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_r}\right) - \frac{\partial T}{\partial q_r} = P_r.$$

Now let us consider the terms in this equation. $q_1 \ldots q_n$, as has been marked above, are measurable spatial magnitudes sufficing to fix unambiguously the configuration and position of the system at a given moment. T is a function of these co-ordinates of a certain definite form. In the most general case it takes the form

$$M[A + \sum_{r=1}^{r=n} B_r \dot{q}_r + \sum_{r=1}^{r=n} \sum_{s=1}^{s=n} C_{rs} \cdot \dot{q}_r \dot{q}_s]$$

when A and the B's and C's are functions purely of the q's and of time, and M is a pure scalar constant characteristic of the system. M has the further property of being an additive

constant. By this I mean that, if we have two systems S_1 and S_2 and their separate Lagrangean equations involve M_1 and M_2 respectively, then the Lagrangean equations for the two, regarded as forming a single system S_3, will be characterised by a constant M_3 such that $M_3 = M_1 + M_2$. T is, of course, really an old friend, the kinetic energy of the system. The forms of A and of the B's and C's are of the following nature. They are always sums or integrals carried out through the whole region of the system. The term under the integral sign always contains, among other things, a function of the co-ordinates and the time expressing the distribution of density, and such that this function when integrated over the whole volume is independent of time and equal to M. Apart from this limitation, the function is characteristic of a given system, and nothing further can be said of it in general. Similarly, of course, the limits of the integration vary from system to system, and nothing can be said of them in general.

We may say, then, with regard to the left-hand side of Lagrange's equations, that what characterises a mechanical system is (*a*) the general form of the function T as regards its degree in $\dot{q}$; (*b*) the fact that the coefficients in T other than M are functions of purely spatio-temporal magnitudes, that they are always sums or integrals taken throughout the volume of the system, and that they always involve, among other things, under the integral sign a function which when integrated through the volume is equal to M; and (*c*) that this quantity M is a pure scalar, independent of time, and additive from one system to another in the sense defined above.

§ 6. We can now turn to P_r, the term on the right-hand side of Lagrange's equations. The P's are called generalised components of force; and there is a very marked difference between them and T, both in their form and in their independent variables. The variables in T were only the q's and $\dot{q}$'s of its own system, S, and the form of the function was fixed by the laws of mechanics. But the P's are functions which always

involve variables belonging to other systems, since they represent the mechanical effect of the rest of the world upon S; and the form of the P's cannot be laid down beforehand, but depends upon the special natures of S and of the parts of the world that affect it mechanically. *E.g.*, if S contains pieces of iron, and S′, the part of the world whose effects on S have to be considered, contains electrically charged bodies, and is moving relatively to S, the form of the P's will depend on the laws of electro-magnetism. If both be uncharged and unmagnetic, the form of the P's will depend on the laws of gravitation. At present, then, we can say that, so far as the laws of mechanics alone are concerned, the functions on the right-hand side of Lagrange's equations are practically unlimited, both in their form and in the number and kind of their independent variables. These are determined by the special laws of nature and will vary with the chemical, thermal, electrical, or magnetic state of S and S′. Their independent variables will therefore (*a*) not be confined to geometrical and temporal magnitudes, the first differential coefficients of the former with respect to the latter, and a single additive constant; as was the case with T. Variables such as temperature or electrical charge may enter, and new constants, such as the gravitational constant or the elasticities of various kinds of matter may be involved. Again, (*b*) the geometrical variables may be present as differential coefficient with respect to time of any order. In some theories of electrodynamics, *e.g.*, the P's would contain accelerations as independent variables, and mechanics has nothing to say against differential coefficients of any order you please figuring here, if the facts of physics are found to demand them.

We thus reach a rather interesting conclusion. If by "mechanically explicable" we mean "obeying Lagrange's equations," we are tied down pretty tightly by the left-hand side, and allowed almost unlimited latitude by the right-hand side as to the forms and the variables of the functions which express the laws of nature. This difference between the two sides of the

equation becomes less startling when we remember that the left-hand side never professed to contain ultimately any variables except spatio-temporal ones, since the laws of motion by themselves never pretended to inform us about any other characteristics of material systems beside their configurations and positions at every moment of time. In fact, the laws of motion, whose form is summed up in the form of Lagrange's equation, and of the function T, and whose restricted subject-matter is indicated by the restriction in the nature of the independent variables in T, may profitably be compared in their relation to the movements of matter with the laws of logic in relation to our reasonings. The laws of logic will not guarantee our premises or our conclusions; but they forbid some conclusions to be drawn from some premises. Similarly the laws of motion will not tell us that matter will move or the particular way in which the state of one part of the world will determine motion in other parts; but, if true, they restrict possible movements within certain wide limits.

§ 7. Now I think that most people who speak of mechanical explanations and hold that they are always possible in theory mean by them something in one respect more rigid, and in another respect less rigid, than the mere obedience to Lagrange's equations which we have so far described. To put the matter figuratively, they would be prepared somewhat to loosen the rigidity of the left-hand side, and would insist on greatly tightening the laxity of the right-hand side. Let us consider these two points in turn.

It would be justly counted unfair to tie mechanists down to a slavish adhesion to the precise form of Lagrange's equations. If the theory of relativity be true, for instance, Lagrange's equations, as we know them, cannot be strictly correct, though their deviation from correctness would be in practice negligible in most cases. Now, it would be absurd to say that a man was inconsistent in holding that everything was mechanically explicable merely because he had deserted the mechanics of

Newton for that of Minkowski or Einstein. As to the form of the fundamental equation and of the function T, then, we must be reasonably charitable; we must allow that an explanation is mechanical even though the forms of the equation and function differ from those in Lagrange's equations, provided that they tend to approach Lagrange's forms indefinitely under normal conditions.

Again, we know that Maxwell tried the very interesting experiment of removing the restriction of the variables in Lagrange's equations to geometrical magnitudes, and replacing them by generalised co-ordinates defining the electromagnetic state of systems. In certain cases and with suitable interpretations of his terms he found that Lagrange's equations held, *i.e.*, that his equations had the same form as Lagrange's and expressed the observable facts, whilst the function T was of the same form as in the ordinary Lagrange equations. Now no one can deny the interest and importance of this fact; but are we to define "mechanical" in such a sense that any region of phenomena in which the laws can be expressed by equations of the form of Lagrange's, even though the generalised co-ordinates be not merely spatial magnitudes, shall be counted as mechanically explicable? Well, we are simply seeking for a definition, and we have a shrewd suspicion that most people who say that they are (or are not) mechanists are far from clear as to what it is precisely that they are asserting or denying. Hence we shall do best at this stage to distinguish two senses of mechanical explanation, a milder and a more rigid one. If the magnitudes which Maxwell took as his generalised co-ordinates be correlated with spatial magnitudes defining the minute structure of the electromagnetic system with which he was dealing, and if these invisible parts obey Lagrange's equations in the strict mechanical sense, it is natural that the correlated observable magnitudes taken by Maxwell as co-ordinates should obey the equations. But the converse does not hold. Hence we can distinguish a milder form of mechanism,

which merely asserts that any region of phenomena is to be called mechanically explicable if the measurable magnitudes which define the state of a system within this region obey something like Lagrange's equations, and a more rigid form which will only consent to call the phenomena mechanically explicable if (to use the convenient expressions of Lorentz) the "macroscopic" obedience to Lagrange's equation be due to the "microscropic" obedience of the minute particles of the system to these equations in the strict sense in which all generalised co-ordinates are spatial magnitudes.

§ 8. There is, however, as it seems to me, a *via media* between these two views, which it is very important to discuss. We talk of defining the state of a system by magnitudes like temperature, electrical charge, and so on, and we distinguish such generalised co-ordinates from the purely geometrical ones contemplated by the laws of motion. But, if we consider what it is that we actually measure when we say that we are measuring temperature or charge, we find that it nearly always is a spatial magnitude or the change or rate of change of one. To take an example. Maxwell found that he could express the effects of two circuits on each other in terms of Lagrange's equations if he took for generalised co-ordinates not merely the geometrical quantities defining their positions and shapes, but also electrical charge as a co-ordinate q and current as $\dot{q}$. If we consider, however, what is directly measured when we say that we measure a current or a charge, it is always a spatial magnitude, such as the deflexion of a galvanometer needle. Suppose then that he had reckoned in with his system of circuits the galvanometers with which he measured the current and the ballistic galvanometers with which he measured the charges, all his generalised co-ordinates would have been spatial, and the only outstanding feature of the so-called non-spatial ones would be that, whilst in themselves spatial, they were supposed to stand for a certain physical state of matter. Here, then, we have got back to the strictly mechanical Lagrangean

equations, but without making any assumptions as to the microscopic accompaniment of macroscopic phenomena.

I do not wish to contend that this invariably removes the distinction between mechanism in the milder and mechanism in the more rigid sense, for I am not sure that it does. The difficulty remains that what from the spatial point of view is a co-ordinate may need to be regarded from the physical point of view as the differential coefficient of a co-ordinate with respect to time if the form of Lagrange's equations is to be kept. Thus a constant current means a constant deflexion of a galvanometer needle; for mechanical purposes the latter would be regarded as a spatial co-ordinate defining the state of the galvanometer; from an electrical point of view it would have to be regarded as the time differential-coefficient of a co-ordinate, if the form of Lagrange's equations is to be kept. Still, this is largely a matter of means of measurement chosen. If charge be measured statically, and current by the rate of decomposition of water, the directly measured magnitudes would respectively be a spatial magnitude and the rate of change of one. Even in purely mechanical problems there is sometimes a difficulty in hitting on the right generalised co-ordinates, and a danger of mistake through taking as a co-ordinate some variable that contains a differential coefficient with respect to time.

All things considered then, it seems not unreasonable to suggest that wherever Lagrange's equations are obeyed in the extended sense which seems to involve non-geometrical generalised co-ordinates for the specification of a system, they are also obeyed in the more restricted mechanical sense, if we substitute for the supposed non-geometrical coordinates the actual readings on some instrument which is said to measure the latter magnitudes, and remember that such readings are always ultimately lengths or angles or their rates of charge. If this be so the milder sense of mechanical explanation involves the more rigid without necessitating any doubtful

assumptions as to the microscopic accompaniment of macroscopic phenomena.

§ 9. It is now high time to return to the right hand of the Lagrange's equations. We have seen that many people who would call themselves mechanists would allow a certain laxity in the form of Lagrange's equations and in the nature of the variables taken as generalised co-ordinates on the left hand side. But we suggested that a mechanistic view is generally considered to impose restrictions on the functions P_r which are in no way necessitated by the laws of motion. Let us now consider what these restrictions are. I think that what might be called a "high and dry" mechanist would impose very severe restrictions, both on the form of the P's and on the nature of the variables and the constants contained in them. It is reasonable to suppose that phenomena are typical instances of mechanically explicable ones if they are treated in books on abstract dynamics and not in books on general physics. Now the two main examples of such phenomena are gravitational attraction and the impact of bodies. What is there peculiar to them which makes them typically "mechanical" transactions? Let us take gravitational attraction first. There are four peculiarities about the form of the P's here. (*a*) All the variables involved in the P's are of the same kind as those involved in T. We simply need to know the shapes, sizes, distances, and distribution of mass in the two systems. No property other than these, which may differ from one system to another or in the same system from time to time, is needed. (*b*) One constant beside mass is needed that does not appear in T, viz. γ, the gravitational constant; but it is supposed to be the same for all systems at all times and in all conditions. (*c*) The P's contain no differential coefficients of geometrical magnitude with respect to time. (*d*) The P's in all cases whatever are vector functions, but in the present case they are vector functions of a special kind. They are compounded vectorially from vector functions which contain the distances

between points of S and points of S′ by pairs, the gravitational constant, and the values of the density-distribution functions for these pairs of points, and which have for direction that of the line joining the two points. This last characteristic is sometimes thought to be guaranteed by the laws of motion themselves, but this does not seem to me to be true. Suppose we take a magnetic pole as our system S and a straight wire carrying current as our system S′. Then the P's are vector functions compounded vectorially out of functions involving the distance between points on the wire and the pole taken by pairs. But these vectors are never in the directions of the lines joining the point-pairs. They are always at right angles to the plane containing the wire and the pole, and hence at right angles to these lines.

The condition (*d*) is a very important one from our point of view. When it is fulfilled we may say that the P's are "mechanically analysable." When this is the case the action of a whole system S′ is connected in a perfectly definite and extremely simple way with that of its parts. S and S′ can be regarded as divided up into mass-points and the total action of S′ on S can be regarded as the vector sum of a set of infinitesimal vectors each involving a point in S and a point in S′, their masses, and some other constant. These infinitesimal vectors will involve the co-ordinates of the point-pairs as differences, and these differences will appear in the function in the same way for all point-pairs. The absolute co-ordinates of each point in the pair may enter through the functions expressing the density-distribution in the two systems, but no co-ordinate of any third point will enter.

§ 10. The imparting of motion by impact, the other kind of transaction which is regarded as typically mechanical, now demands attention. Any case in which bodies hit each other or slide over each other requires for its complete determination a knowledge of two special sets of natural laws beside the laws of motion. We need to know the laws of elasticity and those

of friction. And these laws involve constants which are not the same for all kinds of matter, but differ from one system to another. In the artificially simplified cases of perfect smoothness or roughness or of perfect elasticity, we do not avoid these special laws of nature; we assume them, but we also assume that in the systems under consideration the constants become 0 or 1 or ∞. Thus, impact, which is sometimes regarded as *the* mechanical transaction *par excellence*, seems to me less "mechanical" in a perfectly definite sense than gravitation. For it has to take account of properties which vary from one kind of matter to another, whilst the gravitational constant, so far as we know, is independent of all circumstances. When people take the view that all action is by impact, and this is considered a typically mechanical view, they always make the assumption that friction and imperfect elasticity are merely the macroscopic appearances of microscopic transactions between systems which are frictionless and perfectly elastic. The remaining important factor in impact is that there is no necessity to analyse the action of a system S′ on a system S into actions between their parts. The peculiarity of gravitational action was the simplicity of the relation between the action of a whole and that of its parts; the peculiarity of impact is that no analysis into the actions of parts is needed to explain the different actions of systems with different configurations and distributions of mass. The difference can be put still more accurately as follows. When two systems act gravitationally on each other six triple integrals are needed whose arguments refer to points in each system and whose limits involve the boundaries of both. When two systems act on each other by impact or friction we do indeed need two triple integrals, for we shall need to find the mass-centres of each. But the arguments and limits of each of these refer only to one of the systems respectively. Apart from these we merely need to know the points at which the bodies hit each other, their elasticities and coefficients of

friction, and their translational and angular velocities just before impact.

§ 11. We are now in a position to see what meanings can be attached to the phrase "mechanically explicable." Several possible meanings have emerged, some making the phrase involve much more than others. Our next task will therefore be to arrange them in order from those which are least to those which are most rigid in their demands.

All mechanical explanations imply that the phenomena under discussion obey either Lagrange's equations or some substitute for them which approximates indefinitely to them for ordinary velocities. But, as we have seen, Lagrange's equations can be interpreted in a more or less rigid way: (1) The mildest form of mechanism would simply maintain that all systems can be determined by sets of co-ordinates, q, which may include time, and must exclude differential coefficients of co-ordinates with respect to time, but may include other than geometrical magnitude. That with these co-ordinates a function, T, can be found of Lagrange's form, and a function, P, such that Lagrange's equations hold, and describe fully all the changes of the system. No special form is assumed for the function P. This mildest form of mechanism I will call "descriptive macroscopic mechanism." (2) At this stage a man who still refuses to set limits to the form of the P's may yet make more rigid demands about the generalised co-ordinates. He may insist that ultimately they must be only times and geometrical magnitudes. This view itself may take two forms, a milder and a more rigid one. (*a*) It may simply mean that, whatever we may choose to *call* our generalised co-ordinates, what we actually measure are masses, geometrical magnitudes, and times. These magnitudes are *called* currents, or charges, or temperatures, because of their relations, but in themselves they are geometrical. The view then comes simply to this, that in every region of phenomena the behaviour of any system which includes the measuring instruments by which the phenomena are

investigated obeys Lagrange's equations in the strict sense in which all generalised co-ordinates are geometrical magnitudes or times. This view I shall call "metrical macroscopic mechanism." But (*b*) the more rigid view may be taken that the obedience of the non-geometrical generalised co-ordinates of a system to Lagrange's equations is due to the correlation of the macroscopic phenomena with microscopic transactions, which obey these equations in a form in which all the generalised co-ordinates are geometrical magnitudes or times. This view, unaccompanied by any special limitations on the form of the P's, I shall call "heterogeneous microscopic mechanism." This is as far as we can get without imposing restrictions on the form of the P's.

(3) The functions P might evidently be restricted by confining the independent variables to certain kinds of magnitude, or by making some special assumption about the constants, or by imposing some limit on the form of the function. The rigid mechanist would subject the P's to all these restrictions: (*a*) In the first place, he would only allow P to contain independent variables of the same kind as are admitted in T, viz., geometrical co-ordinates, their first differential coefficients with respect to time, and time. There is something specially "mechanical" in an explanation which only allows on the right-hand side of Lagrange's equations variables of the same kind as those to which the laws of motion confine us on the left-hand side. The theory that all action is by impact or by central forces conforms to these conditions. (*b*) Again, the rigid mechanist would wish to assume that the distinctions between one kind of matter and another, *e.g.*, wood and iron; or between one state of matter and another, *e.g.*, between an unmagnetised piece of iron and the same piece magnetised, are only macroscopic differences, and that their microscopic correlates are always differences of number, configuration, and density. This means that he believes that the P's ultimately contain no constant, other than mass, which differs from one system

to another, but only some universal constant, like γ in gravitational theory. The theory, if it were sincerely entertained, that the microscopic correlate of all the macroscopic phenomena of matter was a set of perfectly similar electrons would fulfil these conditions, particularly if we hold mass to be an electromagnetic phenomenon. In this case the universal constant would be C, the velocity of light *in vacuo*; the only constant that would vary from one system to another, and would take the place of mass, would be electric charge. All variables would be geometrical magnitude or their first derivatives with respect to time, and all the macroscopic differences between one kind of matter, or one state of matter, and another, would be those based on differences in respect of these variables among qualitatively homogeneous electrons. Of course the form of Lagrange's equations would have altered somewhat, but only in ways which we have allowed to be compatible with a mechanical view.

Lastly, the rigid mechanist would impose restrictions on the form of the P's. He would insist either that all action is by impact, or that it is all by central forces. Now either of these hypotheses involves a particular view of the connexion between the behaviour of a whole system and that of its separate parts. The hypothesis of central forces, as we have seen, implies the possibility of a mechanical analysis in the sense defined above. The hypothesis of impact removes the necessity for any analysis at all of the whole into the action of its parts. The view which would restrict the variables and constants in the way described I will call "homogeneous microscopic mechanism," and the most rigid view of all, which also restricts the form of the P's, I will call "pure mechanism."

§ 12. We have thus distinguished five meanings of mechanism. Two are macroscopic and make no assumption about the invisible correlates of observable physical phenomena. These are descriptive and metrical mechanism. All more rigid forms are necessarily microscopic. Heterogeneous mechanism is so from its definition, since it offers itself as a microscopic

explanation of descriptive mechanism. Homogeneous and pure mechanism, if held at all, must be held in a microscopic form, since they fly in the face of the observable facts if you interpret either of them macroscopically. Macroscopically there are different kinds of matter with different specific constants and capable of different physical states which modify their mechanical action on each other. And the mechanical effects of whole systems (*e.g.*, of a heated mixture of oxygen and hydrogen) are not macroscopically connected with that of their separate parts by any laws which allow of a "mechanical analysis" in the sense contemplated by pure mechanism.

The philosopher or scientist, then, who asserts that everything must be mechanically explicable or denies that some region of phenomena such as growth or reproduction can be explained mechanically, must be reminded that his statement is susceptible of at least five different interpretations, and may be invited to tell us which of the five correspondingly different propositions he is intending to assert or deny. In the meanwhile our best plan will be to ask ourselves the following questions: (1) Is there any reason to suppose that everything must be mechanically explicable in one of these senses, and, if so, in which? (2) Is there any reason to believe that some things are not mechanically explicable in any of these senses? As we cannot ask this question at random of everything under the sun, I will chiefly discuss chemistry and then glance at life. (3) Has the possibility of a mechanical explanation in one of these senses (and if so, in which of them?) anything to do with the possibility of treating a set of phenomena scientifically? Of course these questions are very closely connected with each other, but they are independent enough to be separately discussed. *E.g.*, if we found that there was no reason to believe that every set of phenomena could be explained mechanically, it would not necessarily follow that there was any reason to believe that any region of phenomena cannot be explained mechanically. For there may be no good

reason to believe either of two propositions, one of which must be true and the other false. The proper order seems to be to consider the third question first. For, as we have seen, if it could be shown that the possibility of scientific treatment involves the possibility of mechanical explanation in some sense, this would provide a strong and perhaps justifiable presumption that, in this sense, everything must be mechanically explicable.

§ 13. What is needed for the possibility of scientific explanation is that all phenomena should obey *some* laws, and that these laws should not be too complex for us to be able to discover them. Apart from this latter condition it is quite unimportant what in particular the laws may be. Now we have already seen that mechanical explanation never means in any sense explanation that uses no laws except the laws of motion. Lagrange's equations always involve among the P's some special law of nature. It follows that the subjection of a region of phenomena to Lagrange's equations cannot be a *sufficient* condition of its being scientifically explicable, since the laws of nature involved in the P's might be too complex for us to unravel. Neither does it appear to me that subjection to Lagrange's equations is a *necessary* condition of scientific explanation. Roughly speaking, the laws of motion, as embodied in Lagrange's equations, assert that all motions, however caused, and in whatever system, are subject to certain formal laws. There are two factors then to be distinguished (1) the fact that all motions are subject to a single set of conditions, and (2) the fact that these conditions are summed up in the form of Lagrange's equations and in the form of the function T in them. Now it would certainly be difficult and perhaps impossible to have developed scientific explanation to any great length if the first condition had not been fulfilled. If, *e.g.*, movements due to impact obeyed quite different laws from movements due to electrical attraction and the movements of iron systems from those of golden ones, the world would

perhaps have been complex beyond all hope of unravelling. Again, if these laws, though common to all movements, had been excessively complex instead of having the simple form and involving the simple functions of Lagrange's equations, scientific explanation would perhaps have been beyond our powers. We may admit then that probably the possibility of scientific explanation does depend on the existence of *some* general laws of motion, and on these laws being mathematically of a tolerably simple form.

There seems no necessity whatever that the form should be that embodied in Lagrange's equations. Really satisfactory scientific explanation must be in terms of measurable magnitudes and their correlations. Now, it is only geometrical magnitudes, lapses of time, and masses which can be directly measured satisfactorily. The measurement of time by clocks and of mass by weighing ultimately comes down to the measurement of geometrical magnitudes. This is obvious in the case of time; and, in weighing, what we actually observe is the levelness of the beam or the equality of the swings of the pointer of our balance under given conditions. Hence it is very important for the possibility of scientific explanation that at any rate something like metrical macroscopic mechanism should be true, though it need not take the precise form of Lagrange's equations. It would be bad enough if many substances had specific properties like magnetised iron, even though all the forces called into play by them obeyed the laws of mechanics; for I should then have to take endless precautions in weighing a substance A on a balance made of substance B. But the complications would become fearful if, beside this, the laws of statics and dynamics differed according to the nature and state of the substance that I was trying to weigh; for I should then have to work out the whole theory of the balance separately for each class of substance.

We see, then, that the relevance of metrical macroscopic mechanism to the possibility of scientific explanation involves

nothing of profound metaphysical importance, but depends on two limitations of the human mind: (1) the limitation of our senses which prevents us from making very accurate measurements of anything but spatial magnitudes, and (2) the limitation of our understandings which prevents us from dealing with very complicated and non-analysable laws. The fortunate fact that this form of mechanism does seem to hold very widely, and perhaps universally, in spite of there being no trace of logical necessity that it should, may be presented to aspiring Gifford Lecturers, who will, doubtless, know what to do with it.

§ 14. Metrical macroscopic mechanism is then in some form probably a necessary condition of scientific explanation. Is it sufficient, or does science demand mechanism in some more rigid sense? Certainly it is not sufficient, for the special laws of nature, which, as we know, are always needed in any explanation in addition to the laws of motion, might be too complex in form for us to divine and unravel them. If this further demand is to lead us to one of the other kinds of mechanism at all, it will not let us stop merely at heterogeneous microscopic mechanism. For this only offers a special explanation of such macroscopic mechanism as is found, and puts no limitations on the form, the constants, or the independent variables of the special laws of nature.

Before we go any further it will be well to make quite clear the relation between microscopic explanations and mechanism in the more rigid sense which we have now to consider. Logically, there is no necessary connexion between the two, and the fact that the more rigid forms of mechanism are all microscopic is due to the constitution of the actual world, not to the laws of logic or mathematics. A microscopic explanation simply means that directly observable macroscopic phenomena and their laws are explained hypothetically as the results of systems of particles which are too small to be directly observed. It is thus obvious, at any rate, that a microscopic explanation does not imply mechanism in any sense: since the microscopic

movements might not obey Lagrange's equations, and the microscopic special laws might not be of the type demanded by the more rigid forms of mechanism. Thus the atomic theory in chemistry is microscopic without being mechanical in the strict sense, for it assumes different kinds of microscopic particles, and it does not make any special assumption that the laws of their interaction are mechanically analysable. Similarly, there is nothing in the definition of the more rigid forms of mechanism to imply the necessity or even the possibility of a microscopic explanation of macroscopic phenomena. In practice all the more rigid forms of mechanism require a microscopic analysis of phenomena, but this is simply because they are palpably false if asserted to apply directly to all macroscopic phenomena. Macroscopically there are different kinds of matter with different specific properties, and capable of differences of state which can be perceived by the senses, and so homogeneous mechanism is certainly false if applied macroscopically to the whole universe. Again, macroscopically, there are laws of nature, which are not capable of a mechanical analysis, *e.g.*, the laws of electro-magnetics. Hence pure mechanism is certainly false if it be asserted to hold macroscopically of everything in the world. Thus the connexion between homogeneous or pure mechanism and microscopic explanation is that, if these forms of mechanism be true at all, they must be true microscopically, since they are certainly false macroscopically.

It is exceedingly important to be clear on this point; for, if we are not, mechanism may get the credit of the successes of microscopic analysis. Now there is no doubt that pure mechanism deserves a certain reflected credit from the success of the dynamical theory of gases, for that theory does, so far as I know, always assume that the action between molecules is either by impact or by central forces, and thus fulfils the main demands of pure mechanism. The only demand that is left unsatisfied is that of homogeneous mechanism, since the dynamical theory of gases does sssume ultimately different

kinds of molecules. But I do not think that pure mechanism deserves to shine in the light reflected from the successes of the atomic theory in chemistry or of the electron theory. The atomic theory contradicts homogeneous mechanism and makes no assumption in favour of pure mechanism. It is useless to say that perhaps the differences between an atom of oxygen and one of hydrogen are merely differences between the number and configuration of two different groups of precisely similar particles, whose laws are mechanically analysable. Perhaps they are. But since chemistry has no need to make any assumption on the question one way or the other, the success of the atomic theory up to the present can have no tendency to support this view, and therefore can reflect no credit on homogeneous or pure mechanism. Again, the fundamental laws assumed on the electron theory are not of the nature of central forces, so that whatever credit the success of the theory may reflect upon homogeneous mechanism it reflects none upon pure mechanism.

I think, then, that we are justified in saying that the possibility of dealing scientifically with a given region of phenomena does not imply that it must be *known* to obey even microscopically the more rigid forms of mechanism. And if anyone says that its explicability must depend on its *actually* doing this, whether the fact be known or not, he is asserting a pure dogma, for which, from the nature of the case, there can be no evidence. What is necessary is that the ultimate laws of nature and kinds of matter should not be too numerous or too complicated. No doubt pure mechanism with its perfect qualitative homogeneity and its mechanically analysable ultimate laws represents the simplest conceivable assumption as to entities and their connexions. As such it has an elegant simplicity which we cannot too highly admire on æsthetic grounds. But we do ourselves an injustice if we think that we cannot get on with somewhat more complicated entities and laws than this; and we perhaps pay Nature too high a com-

pliment by assuming it *must* be as logically beautiful as we can imagine that it *might* be. We may admit with Mr. Dombey that "Nature is a highly respectable institution," but we need not stake our faith in science as its being so terribly respectable as that mathematical Mrs. Grundy—pure mechanism—demands.

§ 15. An objection which I imagine might be made at this point is the following: No doubt the example of chemistry shows us that a large region of phenomena can be scientifically dealt with without making any assumption that it is even microscopically mechanistic. But genuine scientific explanation will not be content with dividing the world into regions with special entities and laws, and dealing with each region separately. It will want also to see and explain the connexion between the different regions of phenomena. And this is impossible, unless the more rigid forms of mechanism be true of the world, at least microscopically.

Now this really is an important assertion. In order to test it let us see how far a general scientific view of the world would remain possible if we accepted the milder kind of mechanism, viz., that something like Lagrange's equations hold for all movements, whether microscopic or macroscopic, but dropped the more rigid views. We are to suppose then that there may be ultimately different kinds of matter, and that the laws of nature may not be of the kind contemplated by homogeneous or by pure mechanism, and we are to see how much unification would remain possible. This is practically where we should stand if we accepted the present chemical elements as ultimate, and made no special assumptions as to the kind of laws governing the interactions of atoms, over and above the general condition that their movements were subject to Lagrange's equations. The macroscopic world would then consist of various arrangements of various kinds of ultimate atoms moving about in various ways. The nature of the laws between the ultimate kinds of atoms, whatever they may be, renders only certain kinds of grouping stable. These stable

groups are compounds. Now what we should presumably find in such a case would be a hierarchy of laws rising from those which deal with the most abstract and general characteristics to those which only deal with characteristics peculiar to certain kinds of groups. At the bottom of the hierarchy would come the laws of motion which only refer to configuration, position, and motion, and do not by themselves suffice to determine any motion. These, we have assumed, are common to the atoms themselves and to all aggregates of them. But there might also be some particular laws of nature which only involve the same characteristic in all groups. For instance, all our groups will be aggregate in space with certain positions, motions, and configurations. Now there might quite well be some laws which only depended on these properties and did not depend on the particular kind of atoms which were contained in a group. Such laws would be less general than the laws of motion, but more general than any that depended on the particular nature of the atoms in a group. For all groups have *some* configuration; hence these laws would show themselves macroscopically in *some* form in any group of any order. Of course they might show themselves macroscopically in very different forms in different groups. Groups whose structure was similar might be expected to obey the same forms of these laws; those whose structure was different, different forms; but, in any case, the different forms would all depend on the one characteristic of structure in a uniform way, and thus the various laws could in theory be united in a single explanation. As a special case there might be laws which were precisely the same (and not merely different specifications of a single general law) for all possible groups. The latter, if such there be, would be the next most general laws in the hierachy. An example is the laws of constant and of multiple proportions in chemistry. The next set of laws in the hierarchy would be those which depended on structure in a uniform way, but took different forms for different kinds of structure. These would be the

laws of what we call the physical as distinct from the chemical properties of bodies. An example would be the rotation of polarised light by compounds containing an asymmetrically linked atom. It is now clear why such laws will reappear in some form in every group of every order.

§ 16. Next would come those properties of first order groups which, while they may depend partly on the configuration of the groups and on the motions of their constituent atoms, also depend on the particular nature of the atoms in them. Such properties, and laws in terms of them, will not be able to be regarded as instances of a single law if, as we are supposing, the differences between the various kinds of atoms be irreducible. The characteristic behaviour of each chemical compound will then have to be studied separately. This, however, does not preclude all hope of further unification. *E.g.*, it is quite open to us to take a series of compounds of the same type, *i.e.*, of the same structure, to replace a given atom by others in turn, and to see if we can find any general laws. The laws connecting the properties of wholes with those of their parts will be far more complicated than those contemplated by pure mechanism with its mechanical analysis, for they will be a joint function of the structure of the compound, the nature of the atom under investigation, and the natures of the remaining atoms in the compound. But there is nothing theoretically hopeless in the task of trying to find general laws connecting the properties of compounds with those of their constituents when it is once clearly understood that this simply means changing one independent variable at a time in a function which involves several, and whose form is unknown to us and seeing what general laws emerge. Further unification than this in this particular direction will, of course, remain imposible if the differences between different atoms be ultimate.

Now it is obvious that there might be groups of higher order than the first with special laws of their own. Let us see what this means. There might be certain groups of compounds

maintaining for a time, within certain limits, a characteristic structure and a characteristic proportion between the amount of the compounds in them. A very simple example would be a crystal with water of crystallisation; a very complex example would be an organised body. Now, in the first place, we should expect these groups to exhibit the laws of mechanics, physics, and chemistry. They would obey the laws of motion by our fundamental assumption. Again, they have configurations and motions, and so they will obey all those laws which only refer to such properties. They might conceivably exhibit the latter laws in new forms, because, *ex hypothesi*, we are dealing with a characteristic kind of structure; but still the new forms are not ultimately new laws but only special results of a common principle concerning the relation of structure to properties applied to a specially complex kind of structure.

§ 17. But it seems to me that they might also have properties and obey laws of their own which were not deducible from any we had learned by studying mechanics, physics, and chemistry. The properties of compounds, as we saw, are doubtless functions of their structure and the motion of their atoms, and of the peculiar properties of the atoms themselves. The laws of such compounds have been studied by isolating the compounds as much as possible from everything else, and so dealing as far as possible with pure cases where only the structure and components of the particular compound under investigation were likely to be relevant. Of course you never can in practice study one compound in the absence of all others, since there will always be others present in the vessels that you use in your experiments, in the room where you perform them, and so on. Still we can learn by varying the conditions that variations in a vast number of factors are irrelevant to the properties of a compound, and when we assert in chemistry that compound C has properties $p_1 \ldots p_n$, we must be understood to mean that it has these under all those conditions which are conveniently, but not with strict accuracy,

summed up by the phrase "in isolation." Now in a group of the second order our compound is in special conjunction with other compounds, and it is in a different conjunction from any under which it was tested in the laboratory when we said it had such and such properties. This is especially true if the second order group be a living organism. Hence, all that we are justified in saying is that the properties and laws of a second order group will be functions of the structure of it, and of its subordinate groups, and of the special elements in all these groups. We are not at liberty to assume that each subordinate first order group will obey precisely the same laws as it did when we investigated it under quite different conditions. To assume this is to assume that the function connecting the structure and components of a second order group with each of its properties is analysable into a sum of functions each involving only the structure and components of one of its subordinate first order groups. This may be true, and it will be very nice if it is; but we have no right to assume it without investigation.

Perhaps I can make the point clearer to some people in the following way: Let A, B, C be compounds in the chemical sense, *i.e.*, first order groups. Let X be a second order group consisting of A, B, and C in certain definite proportions and positions, and with a definite structure in space. Let the atoms in A be $\alpha_1 \ . \ . \ \alpha_p$, those in B be $\beta_1 \ . \ . \ \beta_q$, those in C be $\gamma_1 \ . \ . \ \gamma_r$. Let us call the structures of A, B, and C, σ_A, σ_B, and σ_C, respectively, and the state of their surroundings S_A, S_B, and S_C, respectively. Then presumably the chemical behaviour of A is $f_A(\alpha_1 \ . \ . \ \alpha_p, \sigma_A, S_A)$, that of B is $f_B(\beta_1 \ . \ . \ \beta_q, \sigma_B, S_B)$, and that of C is $f_C(\gamma_1 \ . \ . \ \gamma_r, \sigma_C, S_C)$. What we know from ordinary chemistry is that over a very wide range of variation a change in the variables S_A, S_B, S_C is irrelevant. Naturally, we never know that all possible changes in them will be irrelevant. Now take the behaviour of the second order complex X. In the first place, we can write this

as $f_X(A, B, C, \sigma_X, S_X)$. Here σ_X refers to the structure of the second order complex in terms of the first order complexes taken as elements, and by S_X to the surroundings of the complex X taken as a whole. Now let us consider, *e.g.*, the behaviour of A in this complex. B and C, with their structures and components, σ_X, the structure of the complex, and S_X, the surroundings of the complex, will now all be lumped together as S_A, the surroundings of A in the function $f_A(\alpha_1 \ . \ . \ \alpha_p, \sigma_A, S_A)$, which expresses A's chemical behaviour. Now all that we know from chemistry is that the value of the latter function is unaltered or alters in certain known ways over a wide range of variation of S_A; we do not know that it will remain unaltered or will alter in any of these ways if S_A be varied beyond these limits. Now in some second order complexes, such as living organisms, S_A will be very different from any of the surroundings which have been tried in ordinary chemistry, and it will not, therefore, be surprising if A should exhibit new and unexpected properties. The same remarks of course apply to B and C. We should doubtless express this fact, if it proved to be a fact, verbally by saying that A, B, and C had *latent* chemical properties, which were always present, but only appeared in certain special surroundings. There is no objection to this mode of expression so long as we remember that it *is* purely verbal, and that it does not alter the fact that some part of the behaviour of the second order complex could be neither deduced nor suspected from a knowledge of the behaviour of its parts in other surroundings.

§ 18. We are now in a position to see what is the alternative to the more rigid kinds of mechanism, and how far scientific explanation is compatible with this alternative. If there be ultimately different kinds of matter, and if some of the laws of nature involve one irreducible property of matter and others another, the ideal of science must be a hierarchy of laws. Most general of all will be the laws of motion, which, however, are in a peculiar position, being only limitative, and not sufficing

by themselves to determine any motion. Next come the special laws which depend solely on structure, and motion, and other properties common to all kinds of matter. These, in some form, will apply to all groups of all orders, for all will have structures, and they and their parts will be capable of moving. They may exhibit different forms in different groups, but all these forms will be special cases deducible from the particular structure of the group and the general laws. Then will come laws whose general form depends only on structure and motion, but which involve the particular properties of particular kinds of matter as constants. So far we have been at the level of mechanics, physics, and what is often called in physical text-books "properties of matter." Next come those laws of first order groups, which depend mainly on the nature of the constituents and the structure of the group. They will no doubt depend on the external surroundings too, but we may be able to see that, within a wide range of variation of these surroundings, the properties of first order groups remain constant or vary but slightly and in easily determinable ways. This is a really new stage; and the laws of this stage cannot be deduced or suspected from the laws in any lower stage in the hierarchy, for here we have new independent variables—the special natures of the constituent atoms—which, *ex hypothesi*, are irreducible and were not involved in the earlier laws.

This fact, however, does not prevent the discovery and correlation of laws at this stage. Our plan here is first to keep structure and surroundings constant and to vary constituents one by one; then to keep constituents and surroundings constant and vary structure, and so on. We may thus hope to obtain some general results that are not merely confined to one group, but connect the properties of groups with those of their constituents. Next, there may perfectly well be second order groups, some of whose properties depend mainly on their component first order groups, and the proportions and relative positions of these. Such groups will of course obey the laws of

mechanics and physics in the sense defined. Even if they show physical properties which have not been met with elsewhere, we may suppose that this is simply due to their special structure, and that the new physical properties would be deducible from the general laws connecting structure with physical properties, and from a knowledge of the peculiar structure of the group. We may also suppose that many of the chemical properties of the constituent first order group will remain. But we are not justified in assuming this for all. The special association of first order groups to make a second order group involves a great change in the surroundings of all the first order groups. They are now in very different surroundings from those in which they were investigated by ordinary chemistry, and we have no right to assume that this change may not make a relevant difference in their behaviour. The position here is not parallel to that possible appearance of unexpected physical properties in second order complexes, which we have already mentioned. These were all, in theory at least, explicable as special cases of a general law. But the ultimately different nature of atoms, if true, prevents the laws of the various compounds being regarded as special cases of some one general law. For the differences of the atoms would be ultimate and qualitative; of what single variable, then, could atomic differences be regarded as specifications? These laws, therefore, of second order groups, would be really a fresh stage in our hierarchy. They would not be any the less *laws* for that. The only practical effect would be that second order complexes would have to be studied, for these properties at least, as a relatively new type of entity, and that we could not hope completely to explain their behaviour from the completest knowledge of their structure, their components, and the behaviour of the latter in other surroundings.

It is true, then, that unless homogeneous mechanism at least be accepted, science must take the form of a hierarchy of laws of which the higher and more specialised cannot be

regarded as merely particular cases of the lower and more general. If homogeneous mechanism be accepted, we do have a unitary system of explanation holding at all levels; and all differences are due to differences of arrangement or motion in what is qualitatively alike. If in addition pure mechanism be accepted, the laws connecting structure and behaviour are of a peculiarly simple type and are everywhere the same. These seem to be the theoretical advantages of mechanism; it should now be perfectly clear that science *can* do without it, but that if it were true, there would be more unity in the world than if it were false. So far as I am aware, practically no scientist, whatever may be his theoretical predilections, actually works with the theory of pure mechanism (which indeed has begun to acquire a faintly mid-Victorian flavour like crinolines, back-partings, and the philosophy of Mr. Spencer). Even homogeneous mechanism is hardly used by anyone; the electron theory, which gets nearest to it, has its positive and its negative particles.

§ 19. It now remains for us to ask whether there be any reason to suppose that the more rigid forms of mechanism are true, and whether there be any reason to suppose that they are false. Well, there seems to be no strong reason to think that they are true. Scientific explanation, as we have seen, is by no means dependent on their truth, and, even if it were, this is no guarantee that they must be true. Is there any strong reason to think that they are false? Here we must distinguish. Macroscopically they are certainly false, and up to the stage to which microscopic explanation have so far been carried, there is no reason to think that they are true. But there are orders of microscopic explanation, as is shown by the molecules of the gas theory, the atoms of chemistry, and the electrons of physics. At none of these stages have we reached a rigidly mechanical explanation, but we cannot tell whether it might not be possible to go a stage further and analyse electrons into perfectly homogeneous particles obeying

a simple law of central force. So long as this is possible, it is possible that mechanism in its most rigid form may be true of the material world.

But the material world, in this sense, is very far from being the whole known universe. I am not here referring to the fact that there are also such things as minds in the world; for I do not think that we need credit any mechanist who is intelligent enough to be worth our steel with the preposterous view that the laws of mind are and must be capable of mechanical explanation. I am referring to the macroscopic appearances: the colours, sounds, temperatures, etc., which we certainly perceive, and of whose existence, at any rate so long as we perceive them, we are necessarily more certain than of the existence of any hypothetical microscopic mechanism put forward to account for their order. These things are certainly real and they must be connected in some way with the supposed microscopic mechanism. Now there are, of course, dozens of alternative views which might be held as to the nature of these sensibilia and their connexion with the molecules, atoms, or other particles of microscopic mechanism. But these views, I think, reduce to one of four alternatives. (*a*) It may be held that colours, temperatures, etc., are properties of bodies and that one function of the microscopic mechanism of these bodies and of our body is to cause our minds from time to become aware of these properties. Or (*b*) it might be held that they are not properties of bodies, but are created under certain circumstances by the microscopic mechanism of our own and of other bodies and are then perceived by our minds. Or (*c*) it might be held that they are created as well as perceived by our minds when these are suitably stimulated by the microscopic mechanism of our bodies combined with, or set in motion by, that of other bodies. Lastly, (*d*) it might be held that the microscopic mechanism is a mathematical fiction and that the only existents are the sensibilia. On this view the microscopic mechanism and its laws are simply mathematical descriptions

of sensibilia and their laws. Ordinary scientists appear to rest in a most unstable compromise between (*a*) and (*c*); (*a*) being held for primary qualities and (*c*) for secondaries. Between these views they oscillate as convenience or shocked common-sense may dictate, piling, as a rule, on top of these incoherences the additional absurdity that secondary qualities are nothing at all.

Now it is clear that any view such as (*b*), which makes the microscopic mechanisms *create* sensibilia, ascribes to it properties which are flagrantly incapable of mechanical explanation. With the view (*c*), the responsibility of creating sensibilia falls on the mind and the microscopic mechanism is left with the task of stimulating the mind to this act of creation and perhaps to the act of perceiving what it has created. In view (*a*) its function is still to stimulate the mind, but now only to perception and not to creation. But in either case the laws according to which the mechanism stimulates the mind, whether to creation or to perception, can hardly be mechanical laws in any intelligible sense. In fact any theory which counts the microscopic mechanism as real and not as a mere mathematical construction must recognise three different kinds of laws:—(i) those obeyed by matter in its mutual action, (ii) those according to which matter affects mind; and (iii) those of minds and their states. The last are admitted not to be mechanical; and the more we fly to microscopic explanations to patch up the obvious rifts in the mechanism of the macroscopic world the more important and numerous will laws of the second kind become. Now these laws cannot in any reasonable sense be called mechanical, since on one side we have the movements of matter, and on the other, at least a perception of the mind, and, on some views, also a creation by the mind.

§ 20. I will conclude with a few observations on a most hackneyed subject—the connexion between mechanism and teleology. I do not profess to understand precisely what people mean by teleology; sometimes they seem to mean an

observable fact, and sometimes a possible explanation of this fact. Thus we hear of internal and external teleology, and they appear to be regarded as two divisions of a single notion. So far as I can see, this is a mistake. Internal teleology seems to be no more than the statement of the fact that some systems exhibit a harmony between their parts such that the mutual actions of these tend to preserve the system as a whole and to perform some definite function. This is an observable fact, not a theory. External teleology is a special hypothesis to account for this fact, viz., the theory that systems which exhibit internal teleology in this sense do so because their parts were originally ordered with a view to this result by someone who desired it and foresaw that it would follow. It will therefore make for clearness if we drop the adjectives internal and external altogether, and call the observable fact "teleology" pure and simple, and the hypothetical explanation "design" and not teleology at all.

Now, there are two kinds of objects in the world which exhibit teleology *par excellence*: these are machines and living bodies. In the case of machines, we know two things: (*a*) that the laws according to which their parts act are, roughly speaking, mechanical, and that the co-operation of the parts to the preservation of the whole or to the performance of any definite function depends on their shapes and arrangements; and (*b*) that the parts were shaped and arranged by someone who wanted a certain result and saw that this means would bring it about. In the case of living bodies, we are uncertain of two things: (*a*) we are uncertain whether in all their behaviour they obey mechanical laws in any of the more rigid senses defined in this paper; for, if there be any complexes of higher order such as we have discussed, living bodies seem to be the most likely candidates for the position. (*b*) We have no direct evidence that the parts of any existing organism were shaped and put together by a mind which foresaw and desired a system which should behave in the way in which these systems

do in fact behave. We know that no human mind designed organisms, and that no human hands constructed them, and we can trace their immediate origin back to very small (I will not be so rash as to add, very simple) pieces of matter, connected however always, so far as we know, with other organisms like themselves. There is, moreover, an additional complication about organisms which is not present in machines. Certainly many, and perhaps all, organisms are connected with minds, and we do not know of any minds except in connexion with organisms.

Teleological systems are comparatively rare; no one contemplating the known laws of matter could have anticipated their occurrence, still less could he have anticipated that minds would turn up in connexion with some of them, would apparently develop *pari passu* with them, and would seemingly not occur except in this connexion. Hence, the existence of such systems is felt to stand in special need of explanation.

§ 21. For machines we seem to have a satisfactory explanation, so far as it goes, provided we admit that thoughts and volitions in minds can be part causes of movements in matter. Otherwise I do not see that the introduction of design helps us at all.* Now I confess that all the arguments produced by parallelists and epiphenomenalists have never seemed to me to have the smallest tendency to disprove the action of mind on matter in a certain definite sense. Observation and experiments do no doubt tend to prove that, once started, the changes in a living body obey the laws of motion and the conservation of energy. But both these principles are merely regulative; they do not by themselves determine either *that* a change will happen, or *when* it will happen if it does so at all. I see no reason to doubt that volitions may be part causes of this; and, unless they be so, explana-

* *Cf.* my paper on "Body and Mind," in the *Monist*, for a fuller treatment of this point.

tions by design are simply what our naval and military friends would term "eye-wash." It follows that the more rigidly mechanical we make organisms, *i.e.*, the more we make them resemble machines, the more we shall be forced to recognise a cause of change in matter which is not mechanically explicable in the rigid sense of the term, if we want to explain the origin of such systems.

At the same time the explanation of organisms by analogy to machines seems to me unsatisfactory for the following reason. Machines are explained by the actions of minds, but minds, so far as we know, only occur in connexion with organisms, and can only act on matter through their organisms. Thus to explain organisms by design looks suspiciously circular. Suppose that organisms are machines constructed, not proximately perhaps, but in their ultimate origins, by God, according to a design in his mind. Is God's mind connected with an organism or not? If not, it and its action on matter are so unlike anything that we know, that to compare organisms as machines constructed by God with watches as machines constructed by men, seems to provide no explanation. If so, who designed and constructed God's organism? It is hardly necessary to point out at this time of day, that if you make God a creator as well as a designer and mover of matter, all analogy with human action vanishes.

§ 22. I must note in passing what seems to me a bad but easily explicable confusion. People have noticed that most and perhaps all teleological systems have something to do with minds. In the case of machines the connexion is perfectly obvious, and provides, so far as it goes, an explanation of the origin of these systems. In the case of organisms the connexion is quite mysterious, and provides no explanation whatever of their origin.

But these differences are slurred over by muddle-headed people. They combine the two facts (*a*) that machines are designed by minds, but do not have minds, and (*b*) that

organisms have minds, while it is not obvious what mind, if any, designs them; and say all organisms must have minds which control their action and development. But they shall be very little ones; we will call them entelechies; and perhaps no one will notice that there is anything wrong. This is the silliest of all explanations. There is no magic in mind as such which will explain teleology; a mind does not explain anything till it has wit enough to have designs and will enough to carry them out. If you want a mind that will construct its own organism, you may as well postulate God at once; if he cannot perform such a feat, it is scarcely likely that what is hidden from the wise and prudent will be revealed to entelechies.

§ 23. To conclude, Teleological behaviour is in itself no sign that anything but mechanical laws in the most rigid sense are operating. Nothing could be more teleological than a watch or a motor-car. Whatever laws be operating, the behaviour of a system depends on its structure and its components as well as on general laws. On any view the question of teleology and its explanation comes back to the question: How did this system come to have the peculiar structure and components which determine in accordance with general laws that it shall behave in this teleological way? In some cases the proximate answer is: Because a mind had certain designs and volitions, and was able by these to determine changes, first in its own organism and then in external matter. Such an explanation involves the view that some changes can be initiated by minds, and therefore the rejection of the more rigid, though not of the less rigid, forms of mechanism. In some cases this cannot be given even as a proximate answer, and in none is it an ultimate one, since it involves reference to an organism, which is itself a teleological system. So the ultimate question is: How do these particular material systems called organisms come to have their peculiar structure and components. So long as we explain their origin by laws, whether mechanical or otherwise, we merely referred back to earlier collocations of matter

and so on, *ad infinitum*. The explanation in terms of a designing mind on the analogy of humanly constructed machines seems to involve a circle or to end in a mind so different from any that we know that the analogy fails, and it is hardly worth calling it a mind. The explanation by entelechies rests on a confusion and avoids no difficulty which is raised by the notion of an external designer. The problem, so far as I can see, is extra-scientific and quite insoluble, and it has no bearing on the question of mechanism and its alternatives.

Meeting of the Aristotelian Society at 22, Albemarle Street, London, on February 3rd, 1919, at 8 p.m.

V.—PHILOSOPHY AS MONADOLOGY.

By H. WILDON CARR.

PHILOSOPHY is monadology, the science of the monad. The order and arrangement which it studies is the monadic order. The term was first made familiar in the celebrated work of Leibniz which bears that title. In adopting it I am not advocating a mere return to Leibniz either for the formulation of a particular doctrine or for a new point of departure in philosophical theory, I am simply suggesting that the term expresses, in a way which no other term will, the true technical subject of philosophy and the nature of its special task. We have come, it is true, to associate it with the special form which Leibniz gave it in his system, and more especially with the difficulties he strove to overcome by the hypothesis of the pre-established harmony. I propose to use the term in a sense in which it seems to me no philosopher can reject it, because it indicates the fact of living experience which is the ground of philosophy as a distinct study.

What, then, is this fact of living experience? It is the mind of the finite individual, the mind which each of us expeiences in himself and recognizes in others. This mind is utterly unlike anything in the physical world, and indescribable by any of the categories under which we classify physical things. In the first place, none of the spatial categories apply to it at all, and in the second place, the temporal categories acquire, when predicated of it, an entirely different signification to what they have when used of physical things. The mind is a monad, and a monad is, in the words of Leibniz, "a simple substance, 'simple' meaning that it is without parts." The mind appears to us indeed at times as a stream of

consciousness, and this stream seems to break up naturally and artificially into distinct and separate states, but reflection shows us at once that the states are not elements or constituents of the mind, for the whole undivided mind is in any one of the states. There is, it is true, a mental order or arrangement, but it is of a different character altogether from the order or arrangement of physical nature which we study in the mathematical and natural sciences. The mind in its integrity is the subject of philosophical science.

At every moment of living experience, and from moment to moment of experience, we are confronted with two orders of arrangement to which we must conform and to which all our actions are adjusted. Each order seems independent of the other, and self-sufficing in its principle, and yet the two orders seem interdependent on one another. The one is atomic, the order of nature; the other is monadic, the order of mind. The two principles, the atomic and the monadic, seem irreconcilable. Moreover, each in its universality seems to exclude the other. Yet, to quote again the words of Leibniz, "the monad is a simple substance which enters into compounds." Thus every finite individual is a multiplicity and a unity. His living activity depends upon the union in one individual of two principles which are antithetical and divergent. The subject of experience is mind and body. The body relates the subject to an order of nature of which the body is itself a part, the mind encloses the subject in a private universe which has neither inlet nor outlet. Each, mind and body, indicates a system of relations and a principle of order or arrangement to which the individual must conform. Let us turn, however, from these technical and abstract formulations and see how the seeming paradox is exhibited in plain facts of experience, illustrated in the most ordinary course of our daily life.

I enter a railway carriage in which other passengers are seated. I at once arrange myself according to the order which I think of as physical reality. There is a space common to all

the objects, and the objects are juxtaposed within it; there is a time common to all events, and the events are in a fixed relation of before and after. I and my fellow-passengers are physical objects among the other physical objects. We occupy space and have a definite range of activity, that is, a possibility of free movement within definite spatial and temporal limits. This order is an atomic order. Quite apart from any philosophical or scientific difficulty in regard to the concept of the ultimate nature of an atom, the whole order and arrangement is conceived as that of elements or constituents whose reality and individuality consists in adverse space occupancy. I and my fellow-passengers ultimately consist of constituent parts from which it is possible to abstract every quality but one, namely, the occupation of a part of space.

This then is the atomic order, and to belong to it or form part of it is in the common-sense and scientific meaning, to exist. But there is another order. Each of my fellow-passengers is, like myself, a mind. Each mind is a universe, a universe reflected into a centre as though into a mirror, and every centre is an individual point of view. Between one mind and another there is absolutely nothing in common, neither space nor time, neither object nor event. To a mind all reality is experience, and to each mind its own experience. All experience is personal experience. Thus I and my fellow-passengers each know only a private space and a private time, and the objects and events which for each of us occupy this space and time are private and incommunicable. I look then at my fellow-passengers, and I know that for each of them, as for me, there is a centre of attentive interest, and I know that everything which I find it convenient to say is common to all of us, is really for each mind an abstraction of some part or aspect of its own absolutely self-centred experience. The order into which, for each mind, every new experience enters is not atomic but monadic. Everything to which I attend becomes part of my experience, and an organic part of it. It qualifies

the whole, and it receives its character from the whole which it qualifies.

Let us compare the two orders in regard to the dynamic principle which underlies them. I and my fellow-passengers are so many physical objects of a definite form and structure who occupy space and endure in time. Like all physical objects we interact, and we interpret this as meaning that we belong to one and the same system of reality. Within this system every movement is exactly compensated. We are causally related with one another within the system of which we are a constituent part. All this has come to seem very plain and self-evident, that is, to require no logical proof, and we name the principle which holds the parts of the system together in reciprocal relationship, causality. It would be impossible, of course, to demonstrate to anyone who should dispute it that there is in fact an exact equivalence between every action and reaction in the system, but the principle is so fundamentally necessary to our concept of scientific reality that, though it may be theoretically doubted, it cannot practically be disbelieved. The causal concept depends upon the atomic concept, for although space is divisible theoretically to infinity, yet everything which occupies it is determined both in itself and in every part of itself by its external relation to every other part. This atomic order with its principle of external relations and causal equivalence of action and reaction is the subject-matter of the natural sciences and their range is practically unlimited. I know, for instance, that my fellow-passengers are highly complex structures organised on a common type for the performance of marvellously co-ordinated actions. To all intents and purposes the natural sciences open to me a range of inquiry which is infinite; but it is a distinct order of reality, based upon a precise concept of a fundamental physical reality common to all subjects of experience, in which each has a definite place in a space order and a definite span in a time order. The atomic order means, therefore, that I recognise a common world

in which I and my fellows and every infinitesimal part of me and of them has its inalienable right to be.

Let us now consider the monadic order. The common world which exists for our bodies does not exist for our minds. Our mind is an inner which has no outer, and this is equivalent to saying that for the mind inner and outer have no meaning. They are really distinctions which belong to the atomic order of the body. In intimate union with each of the conglomerations of atoms I call other people, which jostles against the conglomeration of atoms I call myself, there is an invisible, intangible, impenetrable reality, not common to all of us, but absolutely private to each of us. The elements or constituents of this world are thoughts, feelings, sensations, desires, images, notions, recollections, purposes, intentions,—but these are not atomic elements. When my body dissolves, its constituents remain; they are only dissociated. When my mind dissolves, there are no constituents which exist dissociated. The mind is individual and absolutely indivisible. The phenomenon of dissociated personality, for example, is altogether different in its principle from the common fact of material dissolution.

The mind of a finite individual is a monad, and in using this term to denote it we mean to indicate that the categories we employ in the physical and biological sciences are inadequate. They are inadequate because they are fashioned to deal with compounds and analyse their components. The mind is not compound but simple, and only exists in its integrity. This is our reason for holding that philosophy is science of the monad.

This twofold order of reality, atomic and monadic, is not only met with in the familiar case of the relation of mind and body, it is present throughout the whole range of human knowledge. Whatever in the universe we can come to regard as a subject of experience is a monad. I may illustrate my meaning if I adapt to modern scientific concepts a well known parable. "The Kingdom of Heaven," it was said, "is like to a grain of mustard seed, which a man took and sowed in his field:

which indeed is the least of all seeds: but when it is grown, it is the greatest among herbs, and becometh a tree, so that the birds of the air come and lodge in the branches thereof." The sort of miracle of natural processes which appealed to the spiritual teacher, and gave him his parable, is precisely the mystery which baffles the scientific systematiser. The small mustard seed is a constellation of molecules and atoms which obeys the atomic order of the physical world. Its analysis—chemical, physical, electro-magnetical—offers no difficulty, neither, save for obvious practical difficulties, does its synthesis. So far as it belongs to the atomic order its nature is transparent. But then there is something else, something which makes the mustard seed no part whatever of the atomic order, something indescribable as anything, something which not merely defies scientific analysis and scientific synthesis, but in respect of which scientific analysis and scientific synthesis are meaningless and absurd. We can analyse and synthesise a constellation of molecules, but we cannot analyse and synthesise a past experience, or a present activity, or a prospective end or purpose. These belong to a monadic order. It would, of course, be merely figurative to speak of the mind of a mustard seed, but when we consider the mustard seed in the unity, simplicity, and indivisibility of its individuality, holding in its present activity its past and expressing itself from its own standpoint as a finite living individual centre, the mustard seed is a monad.

The monad is not therefore the concept of an exalted order of existence, transcending or hovering above a lower mundane order, it is any reality when we view it from its own individual standpoint. Anything, however lowly and however limited the range of its activity, which we apprehend as being itself the subject of individual experience,—a subject owning its predicates, not a substance displayed with its attributes to the contemplation of another,—is a monad.

When we view the world in this aspect of it we see what

Leibniz meant when he said "the monads are the true atoms of nature." We can view the universe as consisting of monads and of nothing else. We cannot conceive a universe consisting of atoms and nothing else. A monad is a true unity, a unity which makes a many one. An atom is a unit, not a unity, it is one of many. Leibniz gives us a striking illustration, as remarkable for its scientific anticipation as for its philosophic insight. "In the smallest particle of matter there is a world of creatures, living beings, entelechies, souls. Each portion of matter may be conceived as like a garden full of plants and like a pond full of fishes. But each branch of every plant, each member of any animal, each drop of its liquid parts is also some such garden or pond. And though the earth and the air which are between the plants of the garden, or the water which is between the fish of the pond, be neither plant nor fish, yet they also contain plants and fishes, but mostly so minute as to be imperceptible to us. Thus there is nothing fallow, nothing sterile, nothing dead in the universe, no chaos, no confusion save in appearance, somewhat as it might appear to be in a pond at a distance, in which one would see a confused movement and, as it were, a swarming of fish in the pond, without separately distinguishing the fish themselves."

The moment we grasp this point of view philosophy acquires a special meaning, and at once a whole range of new problems comes to view. These concern the nature of the monad, the plurality of the monads, and their relation to one anothef. Also a whole set of problems will arise in connexion with the relation of the monadic order to the atomic order; problems of perception, of intuition, of intellection, of volition, of action; problems of intercourse, of social order, of the individual and the trans-individual. I mention them to show that I am aware of them, not to raise expectation that I am about to deal with them. What I am seeking to do now is only to show what is essential in the concept of the monad itself.

I have given some instances of the kind of existence denoted by the term monad and also of the mode of being on which the monadic order depends. My mind and the minds of my fellows are monads, any centre of living activity such as a seed or a cell of my body may be viewed as a monad, and in general anything whatever which can be, and in so far as it is, considered from its own subjective standpoint as a subject of experience. I will now, still keeping these particular instances in mind, try and set forth the essential and distinguishing character of the monad. It is expressed in the negative qualification "windowless." We owe this picturesque expression also to Leibniz. "The monads have no windows through which anything could come in or go out." This has proved a great stumbling-block to the acceptance of the doctrine of the monad. It introduces a paradox into the concept itself. There is intercourse between mind and mind; minds are monads; if then there be no inlet or outlet through which influences pass, how is intercourse possible? Many philosophers, confronted with this difficulty, and anxious to retain the concept of the monad, have declared that the monads have windows, that they interact after the manner of physical things, with the difference only that they belong to a higher order.

If we suppose the monads to have windows, then indeed the difficulty of the problem of interaction disappears, but with it disappears also the essential character of the monad. The monad is no longer a monad, it is transmuted into its opposite, the atom. To say that the monad has windows is as though one should say that the circle has angles. Some have thought that the circle may be constituted of infinitesimal straight lines. Such a concept of the constitution of a circle would be to me the exact parallel of the concept of interacting monads. But is it not the negation alike of the geometrical and of the metaphysical concept? I propose then to examine this qualification "windowless" not as a question of theory but as a question of fact. Let me try and first explain what precisely

is meant by this negative character and indicate its particular application keeping in mind the instances of monads I have given.

Let me return then to the illustration of my fellow-passengers in the railway carriage. They are minds and minds are monads. I can communicate with them and they with me. For such communication we are dependent on physical signs,—facial expression, gesture, bodily movement, and above all, spoken words. We are also dependent on special adaptations of our bodily organisms,—sense organs and their neural connexions. All these means and instruments of communication belong to the atomic order, but they seem to intervene between mind and mind and to serve as an independent medium for the interchange of thoughts, wishes, desires, actions, which belong to the monadic order. There is intersubjective intercourse, it is effected apparently by something common to the communicating minds which at the same time is external to each. How is this conceivable unless we suppose the monads have windows? When, however, we conceive the mind and its intercourse in this way we are not conceiving the mind as a monad at all. There are not monads and atoms existing side by side in a spatial universe; there is a monadic order and there is an atomic order. Each order is universal and the presence of one is the absence of the other. When we describe intercourse as an influence propagated from mind to mind through the medium of the physical world, we are not conceiving these minds as monads, subjects of experience, but as substances, essentially atomic, notwithstanding their negative qualification of being inextended. We are in fact conceiving the mind very much as Descartes conceived it when he supposed it to be seated in the pineal gland. We regard it, with its furniture of images and concepts, as existing apart from and externally related to an extended world in space through which it communicates influences to other minds by creating and propagating disturbances in an atomic environment. In the monadic concept the means and instruments are not external to the

monad, and the communicating monads, though completely independent, are not spatially juxtaposed. Here then we touch the great difficulty in the monadic concept. The monad is a concept unlike all our ordinary concepts because while these are based on a spatial schematism, space being the basis of the concept of externality, the monad is the concept of a reality more fundamental than space and externality. The first essential inquiry therefore is, why must we conceive mind as a monad? What is the necessity compelling us to this intellectual effort? Why may we not rest satisfied with the ordinary view that mind is a particular kind of existent thing? The answer is that the ordinary view of the mind, however serviceable and convenient in practical life, is theoretically contradictory and leads to actual absurdity. This will appear if we direct our attention to the problem of intercourse.

In the Academy of Laputa, described in *Gulliver's Travels*, there was a department assigned to "the projectors of speculative learning." One of these was a professor who had contrived an ingenious machine, by means of which, "the most ignorant person at a reasonable charge and with a little bodily labour, may write books in philosophy, poetry, politics, law, mathematics, and theology, without the least assistance from genius and study." The professor's pupils were engaged in breaking up printed sentences into their component words, rearranging the words by means of the professor's invention, and composing treatises by selecting the new combinations when they were found to have meaning. Obvious as the absurdity is, it is worth while to take the pains to discover the nature of the illusion on which the whimsical plausibility of the story rests. It will be found to be identical with the absurdity which we never suspect but which is inherent in the common opinion of the nature of intercourse by means of language or speech.

The learned professor of Laputa might have defended the notion to which he gave practical effect in his machine, by an argument of unquestionable cogency. It is an undeniable fact

that words combined into sentences convey meanings; when then words are combined, meanings are created; consequently, a mechanical device for combining words will be a simple and economical way of creating meanings; meanings once created, it will only remain to select, classify, and preserve them in treatises.

The answer seems so easy that even to tender it appears to argue a lack of the sense of humour. It is enough we should say to point out that words are a conventional device to express meanings. Unless there are first of all meanings, words, which are only means of expression are, if spoken, void and empty noise, if written, visual marks or traces, not signs. It seems therefore that meanings must exist prior to and independently of the words which express them, and so we might suppose that the illusion on which the absurdity rests consists in treating words as still expressing meanings when they are divorced from their meanings. It seems to us, indeed, that two entirely distinct and separate entities join together in speech: first, internal unexpressed intuitions, and second, external physically produced sounds. Speech seems to be an artificial combination and external relation of two things, completely independent of one another in their existence. One of these is a mental thing or meaning, the other is a physical thing—the definite sound wave or combination of sound waves which we name a word. Yet reflection reveals the curious and generally unnoticed fact that when we divorce a word from its meaning it ceases to be a word, and when we divorce a meaning from its expression the meaning disappears without a trace. There is no unexpressed intuition, and there is no word existing in its own right. The absurdity of the professor's invention rests therefore on the universally accepted but false opinion that intercourse is effected by the union of a wordless meaning and a meaningless word.

This twofold illusion is deep-seated in ordinary thinking and very persistent. We think and act, and generally conduct

our whole practical life, on the assumption that our intuitions, our inner thoughts, and our feelings, exist in their own right and entirely independently of any means which we may find of expressing them. The means oftentimes seem absent altogether and always, even when available, more or less inadequate. On the other hand, this means of expression, whether it be plastic material or, like spoken language, the propagation of controlled vibratory movements in a fluid medium, is always, as physical existence, independent of the psychical use made of it. The illusion therefore, if it be an illusion, is founded on what appears to be the very fact of existence.

What are words? They are parts of speech, spoken and heard, or, if written, visual marks which serve as conventional signs of uttered words. Baron Munchausen tells us in one of his marvellous tales, that on a voyage to the Arctic circle, he entered a region of cold so intense that the words of the crew froze as they were uttered and remained suspended, unable to reach the ears until set free later on by a sudden thaw, when they were heard all together. The gramophone has robbed this famous tale of much of its original delight of extravagance. Actual words, with all the characteristic inflexions of the speaker, are now stored in records, and can be produced at will by purely mechanical devices. There are, in practical working, applications of this device of marvellous ingenuity. There is, for example, a telephonic apparatus which will give warning to the mariner approaching a dangerous coast by actually calling out in uttered words the nature of the danger and the way to avoid it. We cannot help therefore treating words as definite things, existing in their own right, which we by means of our organisation of sound production and sound reception use as the means of communicating our ideas. For the deaf and dumb, words have no existence, not because words are non-existent, but because the means of apprehending them are wanting, just as for the blind there is the lack of means of apprehending light and colour. For the normal organisation

therefore there are words without and intuitions within, and all that is necessary is agreement on a convention which will attach a particular intuition to a particular sound.

If, however, we consider what a word is when we abstract from it its meaning, we see at once that whatever form of existence we leave to it, it has ceased in any sense to be a word. The whole of the definition, the fixity, the objectivity, which bestows on a sound the individuality of a word is due to meaning and to nothing else. Speech consists in pronouncing, by means of the larynx and its accompanying muscular mechanisms, sound waves within a certain range of frequency and amplitude and imposing on them a form and definition which the receptive organ, the ear, can select and distinguish. Production and reception are strictly relative, but the relation is not external. Neither medium nor waves propagated in the medium possess in themselves the forms which words assume. There is no identity or fixity in a word which is due to physical structure.

If, again, we consider what a meaning is without words or some other form of expression, we shall find that we fail altogether to give either form or content to the notion of it. We often speak of thoughts too deep for words, we are accustomed to think that we feel what we cannot express, and generally we suppose our mind to consist of a wealth of intuition out of all proportion to its means of expression. Does it accord with fact? The very act of reflecting on the intuition is itself an expression. There are no doubt infinite degrees of clearness or of confusedness in the expression, wide differences in the power or efficiency of the expression to be communicable to another mind, but no introspection will bring to light an intuition save and in so far as it is expression.

We find in fact when we analyse the descriptive account of intercourse which we accept as self-evident, that we are really taking for granted several notions inconsistent with one another and putting them together regardless of their incompatibility. Our ordinary notion of the relation of the mind to the object of

knowledge and of the relation of one mind to another mind is in fact absurd. The absurdity is disguised in practical life because it is convenient, and "convenience" is more important than "logical consistency." So when the absurdity is exposed, as, for example, in the story of the Laputan professor's machine, we are amused but not arrested. We find it difficult to suppose the humourist is in earnest. In philosophy, however, logical consistency is the criterion of truth. Let me first, however, indicate the incompatibility of the notions.

We suppose that there are two different kinds of world, an inner world of mind and an outer world of nature, and their relation to one another seems to be of the following order. Minds are separated from one another and also united to one another by the outer world of nature. This outer world is a system of external relations, and minds seem in the first place to be in definite external relation to it and through it to one another. It is by means of external relations, and not directly mind to mind, that we suppose we communicate with one another. We think the mind is in the world although it does not occupy any of the space of the world or interfere with the real stuff which we suppose does occupy that space. The mind is an ideal world of meanings; nature is a real world of things. It seems to us *prima facie* absurd to suppose that the mind holds the world of physical reality within itself or that in any way whatever that outer world can be an essential part of and belong to the inner world. On the other hand, we find it natural to suppose that the spatial world would remain undisturbed in its existence were there no mind. This is our ordinary notion of the two worlds and their relation. Minds are behind, as it were, and in some way attached to, certain definite material structures, and at the same time independent of and distinct from the order to which those material structures belong.

When, however, we make our notion of a mind definite and explicit, we see that mind consists of feelings, thoughts, and wishes held together, not by a material bond but by a con-

tinuous memory, and owned by a centre of active experience which we call the ego or self. The wealth of a mind consists in intuitions and concepts. All its wealth it has originated within itself and only what it has originated, can it possess. We never think that feelings, ideas, desires, pass out of one mind and enter into another, nor that they arise in the mind in any other manner than by a process wholly within the mind itself. A thousand homely proverbs bear witness to the universal acceptance of this notion. "There is no royal road to knowledge," "A man convinced against his will is of the same opinion still," and the like. It is true that we always associate a brain with a mind, but also we ordinarily distinguish very clearly between the mind and the brain even if we believe that they are existentially inseparable. The continuity which makes the constituents of mind a unity is memory, and the mind is the interrelated system of meanings held together by memory. Memory is the substance of personality in the conscious subject of experience. Meanings can be expressed and communicated, but they can only arise within the mind to which they belong and for which they exist; they never pass out nor come in from outside. This is the fact we are affirming when we say that the monads have no windows.

The external world when we make our notion of it explicit is a system of reality conceived as the direct converse of mind. It has a unity, but its unity is of another kind. It is a system of external relations with no privileged centre, and no part has an exclusive nature. It is true we image it as an aggregate of particular things, each of which seems to own its qualities, but we come in our ordinary scientific inquiry to regard this image as a mere first appearance of, and approximation to, the true notion. The essential feature in our concept of the physical world is that there is an extended substance every part of which is open to influences propagated from every other part. Its continuity is not, like the continuity of mind, in its inner nature. It is the notion of space which gives continuity, and

space is the notion of externality. The external world is conceived, therefore, as a system of events arising out of the interactions of a material substance in a framework of three-dimensional space and one dimensional time, a system in which every movement is exactly compensated by a reciprocal movement and every constituent or element is in causal relation with every other.

Our notion of knowledge is that it is a relation between minds and the external world. The relation is that of subject to object. The images and concepts of the mind, its ideal constituents, are supposed to represent the reality of the external world. Knowledge is truth when the ideas of the mind faithfully and adequately represent subjectively for the mind the objective independent external world. We suppose, further, that the mind can not only express itself in the external world, but can use it as a means of intercourse with other minds.

These ordinary notions—the mind, the external world, knowledge—when we examine them critically are incompatible with one another and inconsistent. The discovery may, and usually does surprise us, but it is no passing illusion, it is clear and manifest whenever we reflect. It requires no dialectical subtlety to discover that if the individual mind be as we suppose, a unity of the ideas which arise within it; and if the external world be as we suppose, an independent existence indifferent in its reality to the ideas of the mind; and if knowledge be as we suppose the valid and adequate representation of the world in the mind; that then either knowledge is an arbitrary and groundless hypothesis or our notions of mind and world are wrong. There cannot be an agreement between an ideality and a reality if by their very definition a common factor is excluded. There is nothing recondite or abstruse in this dilemma, it is patent to everyone who reflects. How then, we may ask, are we able to go through life as we undoubtedly do, with this obvious absurdity barely concealed

in our ordinary common-sense notions? The answer I have already indicated in saying that in practical life convenience is of more importance than logical consistency. It is well, however, to observe the device by which this "convenience" is maintained. The paradox of our common-sense notion is concealed from us by the image with which we portray the whole process of life and mind.

The image which seems naturally suggested to us by our general view of the world and confirmed by common experience, is the image of a mind as a dweller within the chamber of the living body as in an abiding-place. The body is then pictured as a closed chamber but a chamber with windows, the windows being the sense-organs, through which the mind looks forth on to the world beyond. The theory when stated in scientific terms is named animism and finds illustration and expression in innumerable religious beliefs and practices and also in philosophical doctrines. With these we are not concerned. Apart from any scientific, philosophical or religious doctrine, this image of the mind as having an abode and of the body as being this abode, is fundamental and ineradicable. It accords with the analogies of living experience and has come to appear as not itself an analogy, but a direct and immediate datum of experience. It is this image, constantly accompanying us in every philosophical effort to express a pure concept, which protrudes itself whenever we try to present the windowless monad. The monad is windowless, not because it dwells in a dark chamber, but because it is the conceptual of the subject of experience in its integrity.

We can now give precision to the character "windowless." It does not imply that the monad suffers from a defect nor does it denote poverty or deprivation. It is the distinctive feature in a new notion of what reality is and in a new way of conceiving it. It does not mean that monads might have windows, like the sense-organs of the body, but are unfortunately without them. It means that we are conceiving reality and ideality,

existence and knowledge, in a different manner from that of science and common-sense. We are compelled by a philosophical necessity to adopt a new way, because as we have seen particularly in examining the ordinary idea of the process of intercourse, the notion that the mind is the disinterested contemplator of an independently existing world, that it looks out upon it from its vantage-ground in a living body and fashions ideas into conformity with reality for the benefit of the body it inhabits, and communicates these ideas through other bodies, is an impossible and inconsistent notion which leads to absurdity.

The monad is the concept of an individual experience as an integral unity in which subject and object are distinct but united in an indissoluble relation. Subject and object are not separate existences held together by an external bond. They are a unity in duality, a duality in unity. Suppress either term or the relation which binds them, there is no remainder, all is dissolved. To separate the subject of experience from the object of experience, or the object experienced from the subject experiencing is like dividing the circle into centre and circumference and supposing that each exists in its own independent right. The monad includes self and not-self, mind and nature, in the unity of an individual experience. In each monad there is the one and only centre into which the universe is mirrored and one universe mirrored into its own centre. When then we say the monad has no windows, we mean that so far as the objective world is concerned the notion which images the subject as looking out of a chamber on to an alien universe is superseded. There are no separate worlds of the subject and the object and distinctions fall within the monad.

Besides the subject-object relation there is also a subject-subject relation, or rather if we take the subject-object as included in the monad, there are many subject-objects and a plurality, even infinity, of monads. How can the monads be

related if they have no windows? Without going into the problem of the plurality of monads and of the relations of the monads, it is sufficient for the immediate purpose before us to show that the concept of windows, if we adopted it, would be of no service, would indeed be without meaning, If we find it difficult to understand how one mind can know another; how two minds can enter into a common life which is then no longer the aggregate of the two lives, but the whole life of each; how individual experience expands in intersubjective intercourse without accretion or decrease of actual content: our difficulty is not in the "windowless" character of the monads. The concept is not spatial. The subjective experience of a nation does not cease to be the experience of the individuals who constitute the nation. There are no windows in the individual out of which his experience can pass to enter on the new national life. When a man devotes his life to his country in enriching his nation he is not impoverishing himself. This is the meaning of the saying that the monads have no windows.

Intercourse between mind and mind seems to us, therefore, theoretically impossible if the monads, that is, the minds, are windowless. Yet practically we know that the monad is windowless by our experience of this very fact of intercourse. The whole concept of moral conduct might be shown to rest on the fact and to illustrate the fact that the monad is windowless. Consider such concepts as humanity, nationality, church, state, tribe, family, the matrimonial and parental relation—these concepts have no meaning save for individual lives. Everyone supposes individuals in relation of intercourse, yet there is no life outside the individual lives and each concept stands for a higher degree of realised individual life. Thus a nation consists of individual lives and has no separate existence outside the individual lives of those who constitute it. What is it then? It is a fuller and higher degree of each individual life. Nothing passes out of the individuals to form a new combination, the

individuals each gain a higher degree. So we have the apparent paradox of a man losing his life to save it. The same truth is illustrated in every relation of intersubjective intercourse. The man who loves a woman, the woman who loves a man, lose nothing of their own individuality in loving. This is expressed in the paradox "they twain shall be one flesh." The union is not interchange; neither receives nor parts with anything which belongs to its full individuality, but in seeming to give all each gains all. In the perfect union of two living souls, the two monads remain two windowless monads.

I will conclude by summarising the thesis I have tried to expound.

1. Philosophy is Monadology.

2. The mind and its experience in its integrity and indivisible unity is a monad.

3. A monad is a simple substance, but substance conceived as an active subject owning its activities, and not as a substratum of qualities or attributes.

4. The monads are the true atoms of nature. They are not units, but unities. They represent a mental or spiritual order, and are not to be confused with physical atoms which represent nature as an external order independent of mind.

5. Experience obliges us to regard real existence from two different standpoints, namely, as a system of external relations and as an all-inclusive activity. To the individual nature appears as a world which he contemplates, and yet perception and action are wholly dependent on and exist only in and for his activity as a subject.

6. Our practical life obliges us to regard the world as an extended sphere of activity, consisting of a common space and a common time, within which common objects are juxtaposed, and events are before and after one another. By common is meant that which is one and the same for all contemplators. Space, time, and material are the fundamental data of this

world, and its constituent atoms are conceived as forming part of a mechanical system of action and interaction.

On the other hand, experience is itself an order which is pivoted on and revolves around an active subject. The subject is the centre from which activity is directed and controlled and into which the whole universe is reflected.

7. The monad is self-contained and all-inclusive; yet experience obliges us to recognise that there is a plurality of monads, because there are other minds and infinite possibilities of subjective centres, each of which mirrors the universe. The relation of the monads is not juxtaposition but harmony or accord.

8. Units (atoms) form aggregates by addition, combination and disposition. Unities (monads) make the many one. Monads, therefore, enter into compounds, but not by way of addition. The type of the monadic order is seen in the relation of mind to living body. Each organ of the body and each constituent cell of each organ is a monad. The mind which makes the many one is not quantitative.

9. "The monads have no windows through which anything could come in or go out." This negative description gives in effect the positive character of the monad and serves to mark the principle which distinguishes the monadic order from the atomic order. It means that every centre of living or conscious activity possesses the unity of a subject of experience, and that every change in the state of such a subject is wholly determined by the subject and self-inclusive. No monad by intercourse with other monads parts with its substance or deprives other monads of their substance. The monad does not dwell within the body and look out on nature through the sense organs as through windows. Neither does it grow by seizing what is without and adding it to what is within, nor yet does it diminish by dispersing activities in actions.

10. There are not monads and atoms. When we view real existence as a monadic order there are no atoms; when we view

it as purely a system of external relations, *i.e.*, as atoms, there are no monads. The two orders are not of equal validity. When we view reality as atoms we are taking an abstract view for a practical end. The term atom in this context denotes not the electro-magnetic unit of physics and chemistry, but the concept of a particle of any kind in a system of purely external relation.

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VI.—OUR KNOWLEDGE OF OTHER MINDS.

By NATHALIE A. DUDDINGTON.

MY object in the present paper is to maintain that our knowledge of other minds is as direct and immediate as our knowledge of physical things. This statement as it stands is, however, far from being clear, for the terms "direct" and "immediate" when applied to knowledge may bear more than one signification; and the explanation of the precise sense in which they are here used will necessarily involve a discussion of the nature of knowledge. Such a discussion is indeed inevitable, since any conclusion we may come to with regard to a particular branch of knowledge will ultimately depend on the view we take of knowledge as such. Now the nature of knowledge is one of the most controversial subjects in philosophy and there seems little prospect of general agreement concerning it. It would be a hopeless undertaking within the scope of a short paper to try and establish, merely as a preliminary to a further discussion, the truth of any one of the conflicting theories, and I shall not venture upon it. I will merely state the view which I take to be the true one, and then consider what bearing it has on the problem of our knowledge of other minds. The general position which I shall assume to be true can be described as that of realism, but the name "realism" has been used in such a variety of ways that the mere mention of it will not explain how the facts of cognition are to be interpreted. I will, therefore, briefly indicate the general propositions in regard to knowledge with which I propose to start, and in doing so I shall repeat a great deal of what has

been said by Professor G. Dawes Hicks in *The Basis of Critical Realism.**

All knowledge, I take it, is knowledge *of* something and necessarily involves two factors—the act or process of knowing and that which is known. The process of knowing is a mental event taking place in time and is a modification of the knowing mind, a part of the mind's structure. It has a mode of being which altogether distinguishes it from the facts of the physical world: it is experienced, "lived through," or, to use Professor Alexander's term, "enjoyed." That which is known, on the other hand, is never, whatever its nature may be, "lived through," or experienced in the same sense as that in which the process of knowing is experienced, and need not be mental at all. The process of knowing is essentially active in character and consists in discerning the reality with which the subject is confronted, and differentiating it by means of comparison. Knowledge does not mean a passive reception by the mind of what is given, after the manner in which—to use an old simile—wax receives the impression of a seal; the very nature of the knowing process is to seize upon some feature of the real and, through comparing it with other elements in the given whole, to obtain a more or less clear view of it. The comparison may well be, and in the rudimentary stages no doubt is, crude in the extreme; but apart from it there could be no knowledge. We could never become aware, say, of red colour unless we were able, in some measure, to distinguish it from black, though—needless to say—the comparison would be prior to the use of the words "red" and "black." As a result of the act of discriminating and comparing, the particular reality upon which that act is directed will stand out with some degree of clearness against an undifferentiated background of objects vaguely present to consciousness. We express the relation which obtains between the mind and the reality which it thus

* *Proceedings of Aristotelian Society*, N.S., vol. xvii, p. 300 *sqq.* (1917).

discriminates by saying that the mind is aware or conscious of that reality. This relation is so unique that we have no further means of defining it, but we can draw attention to its peculiar character in a negative way by indicating what it is not, and also by using some descriptive phrases with regard to it. It is obvious that the relation of knowing is not a causal relation; in so far as the mind knows a thing, it does not bring that thing into existence or act upon it. Even if the mind did, in some mysterious way, produce out of its own depths the qualities of colour, sound, etc., it would still be true that the knowledge of such qualities would be distinct from the production of them. The qualities would have to be *there* if they are to be known, and even if they were both produced and cognised by one and the same mental act, it would still have to be admitted that the two aspects of that act—the producing and the cognising—were *toto genere* distinct. However active the mind may be in knowing a thing, its activity does not consist in bringing about changes in that which it seeks to know; on the contrary, our chief endeavour in knowledge is to grasp a thing as clearly as possible and to hold it before the mind, eliminating all that seems to interfere with its clear discernment. It is, of course, not impossible that this endeavour may be doomed to failure and that through apprehending a thing we inevitably alter its nature; but even if this extravagant supposition were true, it would still have to be admitted that the falsification takes place without our knowing anything about it: so far as we can tell from introspection "knowing an object" certainly does not mean "doing something to that object." If I am looking at a rainbow and trying to trace the line of demarcation between the yellow and green in it, there will be involved on my part the active processes of attending, distinguishing, comparing, etc.; the colours themselves, however, will appear not as due to my activity, but as something given to me. Or take another instance. Suppose I am trying to remember the line of argument that the reader of the last paper took in answering a

certain criticism brought against him. As I try to do so, all sorts of memory images, of broken trains of ideas, etc., will flit across my mind, and it will require an effort of concentration to follow out, among a crowd of irrelevant details, the thin chain of connected argument which I wish to recall. The more difficult it is to do so, the more I may be conscious of actively exercising discrimination, in order to sift the material before me, and to single out the object of my interest from a mass of unimportant and confusing details which obscure it from my view. The aim of my activity is that the object should reveal itself to me, and my attitude is one of active discovery and not of active production.

Although the mind, then, in knowing is essentially active, yet its relation to the object which it knows is one of contemplation, of "looking on," of accepting it as "given." I do not mean that we first discriminate an object and then contemplate it; rather we contemplate it *in so far as* we discriminate it. It is not a question of temporal priority, but of two different aspects of one and the same act. Discrimination must necessarily be *of* something, and towards that something the mind's attitude is one of contemplation.

There is a certain danger that words like "look on" or "contemplate," being connected with vision, may suggest that everything which is thus "looked on" must be sensuous in character. But then all terms that are applied to mental activities will be open to a similar objection, for they all bear a mark of their sensuous origin. It is no more misleading to say that we "see" a truth than to say that we "grasp" it. In both cases we have to disregard the literal signification.

In and through the act of discriminating we become aware of that upon which the act is directed. Such knowledge is direct and immediate in character in the sense that there is no *tertium quid* intervening between the mind and that which it knows, no screen which hides the object of knowledge from the knower. However fragmentary, however incomplete our know-

ledge may be, it is yet of the nature of revelation, and gives us a glimpse of the reality which stands over against the mind in the act of knowing. These two expressions—"object" and "standing over against" may lead to misunderstanding. The first seems to imply that the known is always an object in Kant's sense of the term, and the second suggests spatial contraposition. There is, however, no reason why the associations connected with these terms should prevent us from using them in a wider sense. By "object of knowledge" I mean simply "that which is known," whatever its particular nature may be, and I use the phrase "standing over against the mind" to describe the fact that the reality contemplated is recognised as independent of the knowing mind, as "given" to it—as something from which, so to speak, there is no running away.

The process of discovering any particular content of reality may present various degrees of difficulty. Some are easily discerned, while to others we can only grope our way with the help of what has been previously differentiated. I mean by this not merely that in the order of mental development some things are discerned earlier than others, but also that in the case of a mature mind some objects of knowledge are further removed from it than others, and have to be approached *through* the others. The degree of difficulty involved in the process of discovery will vary for different minds, and for one and the same mind at the different stages of its development. What one person "sees at a glance" another may take years to discern; what once required a laborious effort of analysis comes, with practice, to be discerned in a flash. As the simplest instance of what I mean take the familiar case of distinguishing the pattern of a carpet. The colours on it are recognised by us at once, but if the pattern is a very complicated one, it will only be made out gradually, through observing the arrangement of the colours. Yet once it has been discriminated, it will be as obvious as the colours themselves, and the apprehension of it will be as immediate. So far then as the way in which a

knowing mind comes to discern any given content is concerned, there are endless differences in the degree of discrimination required, but these differences have nothing to do with the relation that holds between the knowing mind and the object when once it has been discriminated. By whatever devious ways we may approach any particular content, once we have found it, it will stand over against us, compelling us to recognise its presence precisely in the same way as if it had been discovered through a single act of sense perception.

Knowledge in which the object is thus contemplated seems to me best described by the term "direct acquaintance" or "perception." The essential characteristic of such knowledge is that in it we are "face to face' with the object. Within the realm of perceptual knowledge it may be convenient to draw a further distinction between discovery attained through a single act of discriminating, and discovery attained through a series of such acts;* but the important point is that the *directness* of knowledge has to do not with the means whereby the perception of any particular reality is attained, but with the circumstance that when the end is reached, the mind is *in the presence of* the object.

It must, I think, be admitted that many elements of the real world are of such a nature that they elude our grasp and are never discovered at all. Through being aware of their relation to elements that can be discriminated, and on the ground of that relation, we may be led to believe that they too are real, but we are not able to contemplate them, and there will be absent from our attitude to them that element of constraint, of objective necessity, which is the essential characteristic of knowledge as discovery. To put it metaphorically, the process of inference whereby we are led to suppose that they exist does not take us right up to them, but leaves us half-way, merely indicating the direction in which they lie.

* This is done by Professor Lossky in his book *The Intuitive Basis of Knowledge;* see Part II, ch. ix, on *The Elementary Methods of Knowledge.*

This, for instance, must be the case with some past events which cannot be remembered. We may have reasons to believe that they did happen, but we have no first-hand evidence of them. When I reflect on my past behaviour and say, "I must have been very frightened, or I could not have done anything so foolish," my experience is different from that expressed by saying, "How frightened I was last night!" In the first instance the fear is not present to my consciousness, and I should not know anything about it if it were not for other circumstances; in the second the fear is "given," and I cannot honestly deny its reality. The difference between the two cases is not that in one the object is less difficult to find than in the other, but that in the other it is not "found" at all. The finding would consist in remembering the forgotten emotion.

It is difficult to decide by what term one ought to denote our cognitive attitude to objects which are not "contemplated"; it would, I suppose, be usually described as "indirect knowledge" or "knowledge about." But neither of these terms seems to me satisfactory. It seems a pity to use the word "knowledge" in this connexion, for our attitude to objects which we cannot discover is best expressed by saying, "I don't know, but I think," or "I believe," etc. Perhaps it will be as well in the present context to speak of "inferred knowledge" in order to indicate the fact that the object is not directly apprehended—for in psychological works treating of our knowledge of other minds "inference" is always opposed to "direct observation." It should be noted, however, that inference is simply a method by which we may—or may not—arrive at direct acquaintance with the object, and there is really no point in contrasting the two. From what has already been said, it ought to be clear that by "direct acquaintance" I do not mean what Mr. Russell means—the relation which constitutes presentation as opposed to the relation which constitutes judgment. The simplest act of knowing, I take it, is of the nature of judgment, and the difference between direct and indirect knowledge lies not in the

fact that the first does not, and the second does, involve judgment, but in the fact that in the first, in and through the act of judgment, or through a series of such acts, we are "brought up against" the object, while in the second we are not.

Starting, then, with these general considerations I want to discuss whether our knowledge of other minds is of the nature of direct acquaintance, and if so, whether it involves inference, or may, like the knowledge, say, of a sense quality, be obtained through a single act of discriminating and comparing.

If you open any text-book on psychology you will find it stated as though it were a matter admitting of no manner of dispute that our knowledge of other minds is always indirect. Here, for instance, is a quotation from Professor Stout's *Manual*: "No one can directly observe what is passing in the mind of another. He can only interpret external signs on the analogy of his own experience. These external signs always consist in some kind of bodily action or attitude. Thus, when a man clenches his fist, stamps, etc., we infer that he is angry" . . . . "Interpretation of the behaviour of others can only be founded on data derived from the individual's own experience of the motives and ideas which prompt and guide his own actions."* Or take the following passage which I translate from a well-known Russian text-book on psychology by Professor Tchelpanov: "We cannot see, hear, or in any way immediately perceive the mental states of another being. Take the instance of a person weeping in my presence. I think that that person is suffering, but I cannot be said to perceive his suffering. All I perceive are a number of physical changes which can be observed through the senses. I see drops of liquid rolling from his eyes, I see the change in his features, I hear broken sounds which are called sobs, but I am not directly conscious of anything further. My knowledge of the person's suffering is obtained by inference. When I on a previous

* *Manual of Psychology*, pp. 20 and 539 (2nd ed.).

occasion had suffered, tears had started from my eyes and I made the sound of sobbing. Now, seeing the tears and hearing the sobs, I infer that this person, too, is suffering."* Quotations to the same effect might be multiplied indefinitely, but the two just given are sufficiently typical.

In the passages cited, we may distinguish two arguments. The first is based on the contention that since all we can be directly acquainted with are data of sense and our own mental states, there can be no direct knowledge of other minds. The second is an attempt to explain how we come to acquire such knowledge of other mental lives as we actually do possess.

Let us take the first argument. If what has so far been said about the nature of cognition be true, there is not the slightest ground for believing that knowledge through the senses is more direct than any other knowledge; and, indeed, from the realistic point of view no antithesis can be drawn between perception and conception. That antithesis rests on the supposition that in sensuous knowledge the mind is passive or receptive, while in conceptual knowledge it is essentially active. If the data of sense are taken to be affections of the mind, then, of course, there must be a difference of kind between sense-perception and conceptual knowledge which involves the exercise of the comparing, relating, and analysing activity. If, however, sense-qualities are not passively received but actively discriminated by the mind, perceiving will not differ in kind from other knowledge. Colours, sounds, etc., will be "discovered" in precisely the same sense as that in which relations and other universals are discovered; and the only reason for calling our knowledge of the qualities of material things "sense-perception" will be that the stimulation of the organs of sense is instrumental in bringing about the occurrence of the mental act of discriminating and comparing. But this is purely an accident of our psycho-physical organisation; for aught we

* *Utchebnik Psychologii*, p. 8.

know there may be other means of evoking the act of knowing than the excitation of the nerve endings, and there is nothing intrinsically irrational in the thought of disembodied spirits contemplating the radiance of celestial light. If perception is to be sharply distinguished from conception the distinction must be based not on the presence or absence of stimulation of the sense organs, but on the difference between the objects cognised. There certainly is a difference of kind between particulars and universals, and if we want to designate our knowledge of them by separate terms we may, in accordance with the traditional usage, call knowledge of particulars—perception, and that of universals—conception. Yet if perception be simply taken to mean discrimination of particulars, there is no inherent absurdity in saying that minds can be perceived. Psychologists dismiss the notion as preposterous simply because they assume that the only particulars that can be perceived are those which possess sensible qualities. The analysis of knowledge does not, however, warrant this assumption. If knowing be essentially discriminating, there is no *a priori* reason why we should not discriminate anything; and so far as the nature of knowledge is concerned no ground can be advanced for maintaining that we can directly observe physical things only.

And if we cannot, consistently with the realistic position, regard sense-perception as having any exclusive claim to the title of direct knowledge, exactly the same must be said of introspection. The knowledge of our own mental states is neither more nor less direct than our knowledge of sensible qualities or of other minds. "To be conscious" is not the same thing as "to be known"; the fact that a mental process is "lived through," or immediately experienced does not by itself constitute a knowledge of that process. If "to know" the processes of mind means to determine with more or less accuracy their distinctive characteristics, it is clear that such knowledge does not consist in the mere experiencing of them, but, just like any other knowledge is acquired through analysis

or comparison. Our mental states are "nearer objects" so far as their existence, but not so far as our knowledge of them, is concerned. Indeed, in some respects we are worse off with regard to introspection than with regard to other kinds of knowledge. I am thinking not only of the proverbial difficulties of self-knowledge, but of the fact that so far as the knowledge of our cognitive processes is concerned, the act of knowing cannot be contemporaneous with its object, and introspection must necessarily mean retrospection. An act of discriminating does not discriminate itself, and can only be discerned by means of another act directed upon it. Two acts of knowing cannot, it seems to me, coexist in the same mind at the same moment of time, for if they did, they would be not two acts but one. This circumstance probably does not make any practical difference to the accuracy, or otherwise, of introspection, but theoretically it must, I think, be admitted that our knowledge of some of our mental states involves a time difficulty which does not arise with regard to objects of external perception.

If, then, neither sense-perception nor introspection can be said to be the only species of direct knowledge, the argument generally advanced against the possibility of direct acquaintance with other minds simply falls to the ground. If such acquaintance is to be disproved, the proof must be based not on the nature of knowledge, but on the nature of mind.

Let us consider now the second argument contained in the passages I have quoted. The contention is that our knowledge of other mental lives is inferred and is based on the analogy which their behaviour presents to our own. All that we can directly apprehend, we are assured, are physical things; some of these things are found to resemble our own bodies and to behave like them, and on the ground of this similarity we take them to be animated by minds like our own. I *first* see a person. shed tears and look wretched, *then* reflect that I shed tears and look wretched when I am grieved, and finally conclude that this person, too, must be experiencing the state of

grief. Now, it is perfectly obvious that in our mature experience no such absurd inference is ever made. The most careful introspection will reveal no trace of it, nor detect the slightest time interval between our perception of a person's tears, dejected attitude, etc., and our awareness of his grief. The recognition that he is suffering is an integral part of the total cognitive experience, and not a superstructure based upon it. The physical and the mental sides of the complex before us are apprehended together at one and the same moment of time, and they stand on precisely the same level of psychological certainty. No one, I imagine would deny that with respect to some kinds, at any rate, of expressive behaviour, this is really the case so far as can be ascertained by introspection. By grown up people the alleged inference is never consciously made; as to the children, they are, of course unable to defend themselves against the charge of going through a complicated process of reasoning in order to obtain a problematic knowledge of the fact that their mother is pleased when she smiles at them—but then they are unable to give testimony either way. Where first-hand evidence is obtainable, it goes against the inference theory, and the only reason for overriding such evidence is the dogmatic assumption that direct acquaintance with other minds is impossible, and that, therefore, our knowledge of them must be inferred. That this is not a valid reason I have been trying to show; and the method whereby it is sought to dispose of the testimony of introspection is surely open to grave objections.

An attempt is sometimes made to reconcile the theory with the facts of inner experience by insisting that the inference from the analogy of our own experience is an unconscious inference. It has been made, so it is maintained, so often in the past, that it has come to be, as it were, a part of our mental equipment, and we are no longer aware of making it. I doubt if there is any meaning in saying that a process of reasoning can ever become wholly automatic and be entirely submerged

in the realm of the unconscious, but there is no need here to press the point. The important question is, not whether the inference could have become unconscious, but whether it could ever have been made at all. And the answer, I think, must be in the negative. The argument that the existence of other minds is inferred from the data of our own experience assumes that in the order of time the awareness of our own mental life precedes our awareness of the mental lives of others. But there is not the slightest ground for believing that there really is any such priority. On the contrary, everything we know about the psychology of childhood and of primitive man seems to indicate that it is not my idea of myself that comes first in the order of my mental development, but my idea of other selves. Whether this position is conclusively proved by the evidence we possess, it is hard to say; it may well be that our recognition of other selves neither precedes nor follows the recognition of our own self, but is contemporaneous with it. In any case, the work of Royce, Baldwin, and others, has shown that the priority—if there be any—does not attach to the subjective side, *i.e.*, to the consciousness of our own selfhood. If, however, the existence of our own minds is not discerned previously to the existence of other minds, the latter cannot be inferred from the former; and, the possibility of direct acquaintance being denied, it follows that they cannot be known at all.

But let us grant, for the sake of argument, that an introspective knowledge of self comes first in the order of time. Even then, I think, the usual account of the way in which we become aware of other minds would not work. To begin with, there is one consideration which at once makes it highly improbable, not to say absurd. When the inference as to the existence of other mental lives is said to have become unconscious through habit, the implication is that there must have been a period during which the habit was formed. And when we try to fix that period, we find that it must have been

extremely early in the history of mental development. A child of two attaches intelligible meaning to the phrases, "mother is angry" or "mother is pleased," and correctly interprets her expressive behaviour. Are we to assume, then, that at that tender age the child has already observed its own feelings of anger and pleasure, its own expression of these feelings, and has compared the angry tone of its mother's voice, or her smile, with the sound of its own little voice when angry, and the look in its own face when pleased? This is such a ridiculous supposition, that no wonder psychologists do not like being questioned too closely as to the age at which we are supposed to make the momentous inference that saves us from being solipsists. And if the absurdity of crediting the infant mind with such an extraordinary power of reasoning ever strikes them, they take refuge in the dark recesses of the past, and say that the inference was first made so far back in the history of the race that a child of our day need not consciously go through it. Yet surely this is simply throwing the difficulty a stage further back. In any case, the existence of other minds must have been inferred quite early in the history of the individual—and why suppose that a primitive baby is better qualified to reason from analogy than a baby in a civilised community?

And even apart from this consideration, I do not see how the past experience of the race can help us in the present connexion. However long ago in the history of man the inference may have been made for the first time, each human being has to make it afresh for himself. The accumulated experience of his ancestors, as expressed in language, social institutions, etc., will no doubt be of great assistance to him, but it is his own mind he has to use in order to find out the meaning of his historical legacy. Unless it be maintained that knowledge can be passed on by heredity, nothing is gained by an appeal to the historical development of the human race.

Another objection against the orthodox psychological theory

is this. If our knowledge of the existence of other selves depended on the analogy which their behaviour presents to our own, we should either not even suspect that they exist, or at best possess only a very problematic knowledge of it. This objection has been urged by more than one Russian writer, and it is also elaborated by Lipps in his article *Das Wissen von fremden Ichen.** Put briefly, Lipps's argument is that, from the point of view of the percipient, expressive behaviour of other people presents no analogy to the percipient's own. Through the observation of other people's behaviour we become aware of facts of an order totally different from those revealed to us through the observation of our own behaviour. The bodily changes and attitudes of others present us with a visual picture, while our own bodily changes are felt as a series of kinæsthetic, visceral and organic sensations. Take, for instance, the expressive behaviour accompanying anger—redness of the face, a certain characteristic setting of the features, stamping with the feet, and so on. In the case of another person being angry, we see all these changes, but we do not see them in our own case. If I turn red when I am angry, I cannot possibly know that I do, for, as Lipps observes, we do not gaze into a looking glass while in a fit of rage. What I am aware of is a hot sensation in my cheeks, a catch in the breath, violent beating of the heart, etc.—and these sensations present no analogy whatever to what I observe in the case of other people's anger.

This is, I think, a strong argument, though perhaps it is too much to hope that it is conclusive. Confirmed believers in the inference theory might still maintain that in the course of time the primitive man would find out—say, through accidentally catching a reflection of himself in a brook—what he looked like when angry, and thus obtain a clue to the correct interpretation of the expression of the same emotion in others. One cannot

* *Psychologische Untersuchungen*, I, 4.

help wondering whether at that rate many people would have lived to make the discovery, for obviously a man who did not instantly recognise the look of anger in his neighbour's face and behave accordingly would stand little chance of escaping the consequences of that anger.

Another criticism which Lipps brings against the inference theory is that even if we could observe any analogy between our own behaviour and that of others, it would lead us merely to remember our own past experiences, and not to infer the existence of other mental lives. If I perceived the symptoms of another person's anger it would lead me to think of my own anger and not of somebody else's. This consideration has been previously urged by Professor Lossky. Lossky points out that analogical arguments can never lead to the discovery of any new reality, such as the presence of selves distinct from our own. He also emphasises the fact that the conclusion of an inference from analogy is never certain, but only more or less probable.* If he is right in this—and I think he is—it follows that, on the accepted view, an element of doubt would necessarily attach to the judgment that there are in the world minds other than our own. We ought logically to be less confident of the existence of our friends than of the existence of tables and chairs; and the obvious circumstance that we are not less confident would have to be regarded as a fresh instance of the way in which human affections lead us astray. But the point is that human affections would not be there to frustrate the demands of logic if it were true that other minds were for us merely inferred entities. How could one love or hate "an uncertain supposition of we know not what"?

That the traditional explanation of our knowledge of other minds is open to these objections is, I think, clear. Sometimes, however, facts are explained in a slightly different way, which makes the inference theory appear more plausible. I take as an

* *The Intuitive Basis of Knowledge.* Introduction.

instance of this more subtle type of explanation that quoted by Professor Laird*: "The child discovers that his nurse and his mother will respond to his wants in a way that inanimate objects will not respond, and therefore he comes very early to distinguish between human behaviour and other kinds of behaviour. . . . Through the senses and experience the child comes to distinguish between responsive and unresponsive beings, and when he comes to distinguish himself as himself he is able, by a gradual unconscious logic, to believe without a question that responsive beings have a like nature to his own." Professor Laird takes this view to be both tenable and consistent with the theory that there is no direct acquaintance with other minds. Now, it seems to me that it is either a mere restatement of the analogical argument and open to exactly the same objections, or that it surreptitiously introduces the very point at issue, namely, direct acquaintance with other minds. Clearly the whole contention turns on the meaning to be assigned to the term "responsive." If by "responsive" be meant "producing on me the effect that I look for," then the only step in advance that this type of explanation makes upon the usual theory is that it indicates in what way a certain group of objects, namely, human bodies, comes to be singled out from the baffling multiplicity of things with which the infant mind is confronted. This merely brings us to the point at which the argument from analogy—as delineated by Stout and Tchelpanov—begins, and we are left with precisely the same difficulty of accounting for our recognition of the fact that human bodies are animate. The word "responsive," however, may be used in the wider sense of "living," "active," "animated." If this be what is meant in saying that through his senses and experience the child comes to distinguish between responsive and unresponsive beings, then my whole contention about direct acquaintance with other minds is granted. For the *differentia* of responsive

* *Problems of the Self*, p. 26.

or animate objects as compared with inanimate is just the presence of psychical life, and if we can from the first be directly aware of living things, it means that we can contemplate both the mental and the physical aspects of the complex reality before us. We do not *first* know bodies and *then* infer that they are animated bodies; the presence of mental life is revealed to us along with the qualities of shape, colour, movement, and so on that characterise the body. This does not imply anything so absurd as the assertion that a six-months-old baby knows its mother's mind as distinct from her body; but it does imply that in so far as it is aware of its mother at all, it is aware of her as qualitatively different from the perambulator she is pushing. It will no doubt take the child a long time to understand in what the difference consists, but unless the fact of the difference were directly apprehended it could not behave towards its mother in the way it does. There is nothing contradictory in maintaining that the child is aware of minds long before it knows that they are minds. It is one thing to perceive some particular element of the real, and quite another to be able to determine the precise nature of that element and to disentangle it from the mass of concrete detail with which it is interwoven. In apprehending a coloured object a baby does not discriminate the colour *as such* and abstract it from the shape of the object; but this is not a reason for denying that it is aware of colour. We are aware of relations long before we can be supposed to understand what relations are in abstraction from the things related. Exactly the same considerations apply to our knowledge of minds. Just as apprehension of relations is involved in perceiving this thing to be to the left or to the right of that, so apprehension of minds is involved in distinguishing responsive from unresponsive objects. Once the complex psycho-physical reality—a living being—has been discriminated, it is not difficult to see how, by a further process of analysis, new distinctions will be seen in what at first appeared as a vague and undifferentiated whole, until at last

the qualitative difference between mind and body will be more or less fully grasped.

It is sometimes argued that if we had direct acquaintance with minds we ought to perceive minds apart from bodies, while, as a matter of fact, we do not. The argument does not seem to me to possess weight. If, in the world of being, minds exist only in connexion with bodies—which appears to be the case, so far, at any rate, as life on the earth is concerned,—we can hardly be expected to perceive minds alone; for the business of the knowing activity is not to change the realities upon which it is directed, but simply to discern or to discriminate them. If mind and body are conjoined in nature, it stands to reason that they cannot be apprehended apart. Here again there is a certain parallelism between our knowledge of universals and our knowledge of other minds: we cannot contemplate a universal in and for itself apart from its relation to particulars, and we cannot contemplate a mind apart from a body of some sort. But it is important to observe that the reason why we cannot do so is different in the two cases. A universal cannot be perceived apart from particulars, because its very nature as a universal implies a relation to particulars, while there is nothing in the nature of a mind, so far as we can see, which renders its connexion with a body logically necessary; the connexion is simply an empirical fact.

It does not follow, then, from the direct acquaintance theory that we must perceive minds without any reference to bodies; but it does follow that our knowledge of bodies has either logical or chronological priority over our knowledge of minds. When we are confronted with the complex reality that we call a human being, we may be as directly and immediately aware of the mental as of the physical aspect of it, and, by gradually learning to distinguish between the two we may one day discover that it is the mental side that really matters, and that, in truth, people do not *have* minds, but *are*

minds. In this process inference will, of course, play an important part, and the results obtained by introspection will be of the utmost value in helping us to understand the minds of others. But neither inference nor introspection will be the means whereby we first become aware of the existence of other minds. It is only because we begin by directly apprehending minds that we can go on to reason about them.

But how, it will be asked, can we be said to have direct acquaintance with other minds when it is obvious that, as a rule, we do not in the least know what other people think or feel? Even if they tell us what is in their minds, we can have no certainty about it, for they themselves may not know, and so, unintentionally, they may mislead us. Or they may be deliberately deceiving us; and if the deception is well done it may never be found out. Another person's mind does not lie exposed, so to speak, to our view, so that we have only to glance at it in order to decipher its inmost thoughts and feelings. However true this assertion may be, it is not an argument against the view that minds can be directly apprehended, and to regard it in that light shows a complete misunderstanding of what the theory means. If it meant that our knowledge of other minds is complete and infallible, then, certainly, the fact that we often know next to nothing about other people's mental states, and are frequently mistaken about them, would afford conclusive evidence against it; but then it means nothing of the kind. What the theory does imply is that we recognise the presence of other minds in as direct and immediate a way as we recognise the presence of bodies, or, in other words, that minds are not inferred but discriminated, and this does not in the least mean that the discrimination is either perfect or attained without any trouble.

The misunderstanding just referred to is probably due to the interpretation frequently put upon the word "direct." It is often assumed that in direct knowledge the object is a "mere datum" which you can, so to speak, hold in the hollow of your

hand and gaze upon at leisure, so that it is impossible to be in error about it or to know it in an incomplete and fragmentary way. But, then, nothing is ever, *in that sense*, given. If knowledge consists in discriminating and comparing, it follows that no objects are "simply presented" to the mind. All alike are discerned by the mind, and discerned with varying degrees of ease and accuracy. To say that knowledge is direct and immediate in character, in the sense that there is no veil, no barrier intervening between the knowing subject and the reality which the conscious subject knows, is very far indeed from saying that our knowledge is complete and exhaustive, or that it presents no difficulty in the attainment of it. Discrimination of some elements of the real world may require endless labour, and be only possible for intellects endowed with special aptitude. So far as our knowledge of other mental lives is concerned, certain aspects of them may be apprehended through a single act of discriminating, while others may only be discerned through means of an elaborate process of inference. In thus discriminating a mental life we shall, of course, be bound at the same time to discriminate the bodily accompaniments of that life; but, after what has been said about the impossibility of knowing minds apart from bodies, I need not enlarge upon this further. I cannot be aware of the grief of the person before me without being also aware of the tears, the trembling mouth, the dejected attitude, etc., and the whole psycho-physical complex will be revealed to me through one and the same act of apprehending. The mental side of the complex is not, however, always easy to characterise. There are good biological reasons why we should be able to recognise most readily those aspects of the mental life of others which have an immediate bearing on ourselves, and the more violent emotions, accompanied, as a rule, by a greater degree of bodily activity, are probably the easiest of all to perceive. But the more a mind "withdraws into itself" and shrinks from attracting the notice of others, the more difficult it becomes for outsiders to become

aware of even the emotional aspects of it. A series of acts of discriminating and comparing may then be necessary in order to get at it; and, unless we are particularly interested in the people concerned, we do not usually take the trouble. Sometimes one catches oneself reflecting, "I wonder if this woman opposite is cross or unhappy"; but, as a rule, we do not stop to consider. It is worth observing, in this connection, that in seeking to determine the character of another person's mental states, we hardly ever reason from the analogy of our own behaviour; we generally reason from the previously observed behaviour of others. If I happen to be sufficiently interested to continue my speculation about the woman opposite, I may go on to say, "it must be that she is cross, because when people are grieved their mouth is not set in this hard way"; but it is extremely unlikely that I shall think of the way in which my own mouth is set when I am cross or grieved. So that the type of inference assumed in the analogical argument is, in truth, rarely met with, even in our developed experience.

The bodily actions and attitudes of other people may become to us *signs* of their inner states, but this, again, is only possible because the two have previously been apprehended together. Interpretation of signs is closely interwoven with direct apprehension and is often the means whereby such apprehension is possible. For instance, I may directly perceive that someone whom I know intimately is in a bad mood; but it may take a very careful reading of his expression to find out whether he is tired or uneasy, or depressed. I may completely fail to discover the precise nature of the emotion, though the broad fact that there is "something wrong" will force itself upon my notice in precisely the same way and with the same degree of immediacy as the fact of his presence in the room. Or I may, by closely observing his manner, actually succeed in discerning what his state of mind is; in that case a series of inferences from past experience—such as the reflection "he does not frown in this way when he is simply worried; so

there must be something more "—will be followed by a sudden flash of insight: "Why, he is cross with me, that's what it is." And once found out, his annoyance will have for me the same kind of objective necessity as a thing of sense-perception, and my certainty of it will not in the least be shaken by his saying that he does not feel anything of the kind. I am not contending that the certainty which we may feel with regard to what is perceived is a sufficient guarantee of the correctness of the perception; I am only urging that so far as the experience of such certainty is concerned our perception of minds does not differ from our perception of physical things.

A mind is a much more complex reality than a physical thing, and it is partly on that account much more difficult to gain an adequate knowledge of it. Not everyone can either directly discern the changes in the inner life of others, or even correctly interpret the nuances of their expressive behaviour. Most people are content with perceiving the mere fact that their fellow creatures are feeling and thinking beings, and are not interested in observing what they feel and how they think. People know their friends' and neighbours' minds just sufficiently to get on with them; and when sometimes their interest is aroused and they want to look more deeply into them, they are no more capable of discriminating the subtle differences in the moods and feelings of others than an untrained eye is capable of discerning fine shades of colour. And it may not be altogether a question of mere training or the degree of sensitiveness. If a mind is something that grows and develops, if every memory, every fleeting experience becomes a constituent in the whole which we call the self, if the past is inextricably interwoven with the present, then the humblest of human selves is so infinitely rich in content that it is beyond the power of any finite mind to discern all its wealth. There must be in each individual thoughts and memories, feelings to which not even the insight born of love can find the way; but this does not mean that they are inherently incapable of being known.

If there be a Divine mind, its knowledge of our inner lives is complete and exhaustive; and for the religious consciousness, God is pre-eminently one "to whom all hearts are open, all desires known, and from whom no secrets are hid."

It seems to me irrelevant to argue that direct apprehension of other minds is impossible, because our knowledge of them is faulty and superficial; this is true of our knowledge of anything. Perceiving a mind certainly does not lay bare before us all its thoughts, feelings, wishes, and so on, but neither does perceiving a table reveal to us the atoms and molecules that compose it. What however is perceived in both cases is a certain measure of the reality, in the one case mental and in the other case physical, which may become a starting point for further acts of discrimination. There is probably no single thing in nature, of which we can be confidently said to have a complete and exhaustive knowledge, but this is not a reason for refusing to admit that we can directly apprehend physical things. Why, then, should the imperfection of our knowledge be regarded as an argument against direct acquaintance with minds?

But in what sense, it will be asked, can one speak of minds being objects of perception? The very essence of mental states is their inwardness, their "subjective reference"; to be mental means to be experienced, "enjoyed," lived through; in what possible way, then, can one become directly aware of the mental states of another person? This circumstance is generally regarded as being in itself a refutation of the "direct acquaintance" theory. But I think the reason why it appears so unanswerable is that it involves a certain confusion of thought. In the first place, there is an ambiguity attaching to the word "object." If by "object" be meant a thing that possesses sensible qualities and is in space, then obviously a mind cannot be an "object." If object be taken however, to mean simply "that which is known," there is no absurdity in saying that minds are objects of knowledge. So far it is merely a question

of terminology. Still, it may be maintained that a mental state cannot be an object of direct knowledge in the sense of being present to, or "standing over against" the apprehending subject. Now it seems to me that if the expression "standing over against" the conscious subject be cleared of all spatial implications and be used to indicate the constraining power of objectivity, then, most emphatically, mental states may be objects of direct apprehension. Take, once again, the case of emotions. When I observe the expressive behaviour of someone who is frightened, his fear is just as present to me as his white face, trembling limbs, etc.; and I have as little choice in recognising its reality as I have in recognising the reality of his bodily attitude. The look of misery in a fellow-creature's face wrings my heart with pity just because it is his *suffering* that is revealed to me, and no amount of sophistication will hide it from me. The pain of someone you love seems to blot out the rest of the world from your view; it will not allow you to forget its existence for a moment, and your cognitive attitude to it is exactly the same as to an obtrusive object of sense perception. The characteristic feature of the experience is that you are all the while conscious of the pain, not as your own, but as somebody else's; in technical language the pain is not "enjoyed" but "contemplated." As a rule, of course, the contemplation of another's pain will cause you suffering too, yet it possible to distinguish by introspection between one's awareness of somebody else's pain and the pain which one feels oneself because of it. Sometimes, however, a marked contrast is felt between the contemplated pain of another and one's own pleasurable sense of well-being. The consciousness of such a contrast brings out still more vividly the perceptual character of one's knowledge: one feels that whatever one does one cannot help *seeing* the pain. The circumstance that one may apprehend another person's suffering without suffering oneself, or his fear without being frightened oneself, is, I think, conclusive evidence against the view that the immediacy of the

perception is an illusion due to the fact that the percipient experiences sympathetic pain or fear.

So far as the character of objectivity is concerned, there is no difference between our knowledge of our own mental states and our knowledge of the mental states of other selves. Just as the fear or anger or grief of another person compels me to recognise its presence, so my own mental state, when once it has been discriminated, "stands over against me" as something the reality of which I have no choice but to admit. If I *know* that I was frightened during the last air-raid, I can no more deny the fact of my fear than the fact of the air-raid itself. The circumstances that one can lie to oneself—as one can to other people—is only another proof of the objectivity which attaches to our own mental states; for by a lie we mean precisely a deliberate denial of what we know to be the truth. Unless, then, we could be conscious of our feelings, thoughts, volitions, etc., as possessing this objective character—as being something to which we can no more "shut our eyes" than to objects of sense-perception—the very real experience of being honest or dishonest with oneself would simply not exist.

That our own and other people's mental states constrain us, in our knowledge of them, to recognise their reality and, in this sense, "stand over against us," is, I take it, an empirical fact. The only reason for seeking to explain this fact away, so far as our knowledge of other minds is concerned, is the dogmatic assumption that other people's mental states cannot be contemplated, and that the only way in which we could directly know them would be by "living through" them. This is, for instance, what Royce maintains: "If my neighbour's physical pains ever became mine, I should know them by immediate acquaintance only in so far as they were mine, and not my neighbour's. . . . . If my neighbour's states became the immediate objects of my own acquaintance, my neighbour and I would so far simply melt together, like drops in the ocean or small pools in a greater pool. The immediate acquaintance with my neighbour's states of

mind would be a knowledge neither of himself as he is in distinction from me, nor of myself as I am in distinction from him."*

This conclusion is of course inevitable if the premisses be granted; but then why assume that, in order to have direct acquaintance with another mind I must *be* that mind? The essential characteristic of knowledge is, as we have seen, that it never is identical with its object. I do not become the thing which I know; I simply contemplate it. And if I can contemplate my neighbour's paleness without turning pale myself, why should I not be able to contemplate his pain without myself being thrown into pain?

The real point at issue is whether mental states can be contemplated or directly apprehended at all. If they can, there is no ground for maintaining that this is true of our own states alone. If I am right in contending that introspection is no unique kind of knowledge, but involves the activity of discriminating and comparing directed upon mental states which, when discerned, I am constrained to recognise, then, clearly, mental states are not merely "lived through," but can also be contemplated. And if I can contemplate my own psychical processes, why not other people's? Because you cannot, it will be urged, "live through" or immediately experience other people's mental states as you can your own. But this would only be a valid objection if "living through" a mental state were the same as *knowing* that mental state; and I am contending that that is not the case. I know my own emotions, not in so far as I experience them, but in so far as I turn my attention upon them and "consider" them; the fact that they are "lived through" does not in the least help my knowledge of them; if anything, it hinders it. If I am aware of the quality of my emotion at the same time as I immediately experience it—if I

* Art. "Mind," in *Encyclopædia of Religion and Ethics*, vol. viii, p. 653 (1915).

both am angry and know that I am angry—my total experience will, of course, be different from that of dispassionately contemplating my neighbour's anger; the difference, however, will be due not to difference in the nature of apprehension, but to the fact that in one case I both experience and know the emotion, while in the other I know it without experiencing it. The fact of being "lived through" constitutes the existence of a mental state, and not the knowledge of it. It is, of course, obvious that there can be no feelings, cognitions, emotions, etc., unless they are being experienced by somebody; but since the experiencing of them is not the same as knowing them, what reason is there for assuming that mental states can be contemplated by that mind alone whose states they are? If being angry is not identical with knowing that one is angry, why suppose that the only person who can ever perceive the anger is the person who is actually experiencing it? This would only be true, if being part of the mind's structure ensured some unique kind of immediacy with respect to being known by that mind; but there is not the slightest ground for believing that such is really the case.

In knowing another mind I contemplate the mental states "enjoyed" by that mind. My neighbour's mental states exist, in so far as they are "enjoyed" by him, but my acts of discriminating can be directed upon them, and they can become objects of contemplation for me in precisely the same way in which my own mental states can become objects for me. The fact that they are somebody else's experiences will, of course, be an integral part of what is apprehended. To use a metaphor, the person who experiences a mental state knows it from the inside, and the one who contemplates it from the outside. What I am saying, then, is briefly this. We find that as a matter of fact mental states can be contemplated in addition to being "enjoyed"; there is nothing in the nature of knowledge to limit such contemplation to our own mental states, and as the empirical evidence in favour of its not being thus limited

is very strong, there is every reason for maintaining that we can have direct acquaintance with other minds.

There is, however, a further difficulty which may be pressed against the view that other minds can be directly apprehended. We may be challenged to point out what exactly it is in a mental state that can be discerned by an external observer; or, in other words, to explain in what sense we can speak of the "outside" of a mind at all. Now, in the first place, it should be noted that this difficulty arises just as much with respect to introspection as with respect to our acquaintance with other selves. For the *cognitive* relation between the state which is being, or has been, "lived through," and the act of discriminating directed upon it is precisely the same kind of relation whether that state happens to be mine, or to be somebody else's. In the second place, it must be observed that even if the challenge could not be met, this would not invalidate the argument I have been advancing. If the analysis of the facts of knowledge leads to the conclusion that mental states can be contemplated, it would be illegitimate to deny this on the sole ground that we are unable to understand what it is in a mental state that lends itself to contemplation. In view of these two considerations, I do not think that the discussion of this difficulty falls within my task. But the question is so interesting in itself, and is so often used as a final weapon against the direct acquaintance theory, that I will briefly touch upon it.

The precise way in which the difficulty will be met will depend, of course, on the view that is taken of the nature of mind; but I think it is possible to suggest an answer which does not pledge me to any particular theory as to what a mind ultimately is. It seems to me that there is a certain minimum which has to be admitted on any theory if we are to speak of "minds" at all. Even if a mind be reduced to a mere succession of momentary "diaphanous" acts, two things at least would have to be granted, namely, that these acts are events taking place in

time and that they are mental; and this amounts to saying that they are existent particulars characterised by a unique quality of their own. Now, assuming that to be an existent particular means to form part of an interconnected system of particulars, it follows that a mental act or a series of such acts cannot be only in and for itself, but must also be in relation to other particulars. If it were wholly inward and subjective, so that there could be no meaning in speaking of it as being *for* anything else, it might be removed from the world of concrete existence without making the slightest difference to what remained. Yet this would simply mean that it was *not* an existent particular. And if it is an existent particular, if, that is, it is capable of entering into reciprocal relations with other particulars, it cannot be a mere blank from the point of view of such of those particulars as are themselves mental. The least that they could discern with regard to it would be that it is a something with a peculiar, and further indefinable, nature of its own; and, as minds are not found apart from bodies, the quality of being mental would appear to the external observer as the quality of being living or animated. The recognition of the existence of another mental life could be expressed by the judgment, "This is a living being." As I have urged already, it is such direct apprehension of mind that explains the distinction drawn very early in the history of mental development between responsive and unresponsive beings. But even in mature experience our direct acquaintance with other minds is often limited to the bare recognition of their existence. We immediately perceive the presence of a mind, but we often fail to discern anything further with regard to it; we are directly aware that the fellow creatures we meet in the street are human beings and not walking mannekins, but we hardly see more than this. And even the affective aspect of another mind which is the easiest to discern may escape our notice if the discrimination of it requires a special effort or a certain degree of sensitiveness on our part. Still, on the whole,

the emotional life of other selves is the most readily accessible to contemplation, and we discriminate people's moods and emotions with a tolerable degree of accuracy. In the case of intimate friends, the mood of one may be discerned by another even when it does not in any way express itself in bodily action or attitude.

To say that we can perceive the actual presence and the affective aspect of another mental life does not, I think, in any way prejudge the question as to what the ultimate nature of mind may be. To the further question, however, whether we can contemplate anything more than this, no answer can be given which does not involve a theory as to the status of presentations and images, and which does not assume either that there is, or that there is not, a qualitative difference between mental acts. I believe that there is, and I also think that there is a real difference of quality between one mind and another, to which we give expression when we speak of a "dull" or a "quick," a "coarse" or a "sensitive" mind; and it seems to me that these differences can be known by direct acquaintance. But this statement raises too many thorny problems as to what a mind really is, and I am not now intending to defend it.

Finally, it remains to point out that the same set of considerations which apply to our knowledge of finite minds, apply also to our knowledge of the Infinite Mind. If by the Infinite Mind be meant an existent reality, then it too can be contemplated and "stand over against" the apprehending mind, compelling the latter to recognise its presence. I think this is precisely what does happen in religious experience, and that if we could not stand in this direct relation to God, religious experience would simply not exist. However fragmentary, imperfect, and incomplete our apprehension of God may be, yet it is God that we apprehend. It does not seem to me that the fact of religious experience can be either denied or explained in any other way; but even if it could be, it would not affect the theoretical part of my argument. If the Divine mind has

never been discriminated, all that this need mean is that the conditions which render such discrimination possible have never yet been fulfilled. It would still be open to maintain that our knowledge of God does not differ in kind from our knowledge of other minds, and that the way to it lies not in becoming that which we seek to know, but in perfecting our powers of discrimination. In the words of an ancient anthem, "Let us purify our senses, and, behold, we shall see."

ERRATUM.

On page 165, 7 lines from bottom,
for "either . . . or" *read* "neither . . . nor."

Meeting of the Aristotelian Society at 22, Albemarle Street, W. 1, on March 17th, 1919, at 8 p.m.

VII.—THE SCOPE OF THE SCIENTIFIC METHOD.

By A. E. Heath.

It has become very evident in recent discussions that a sharp division of opinion exists as to the scope of the scientific method. On the one hand, there are those who hold with Professor Bosanquet that all antecedent prescription of method is futile, or with Professor Wildon Carr that there is a method of philosophy which may include, but is not identical with, the method of science. On the other hand, we have the claim that, whatever the field—whether you call it philosophical or not—the method of science as opposed to its results is directly applicable. This opposition must be my excuse for dealing at some length with non-philosophical questions; in that it may be of value to inspect a little more closely the method of science in its own undisputed domain.

It is not maintained by either side, I take it, that man has no other impulse than the desire to know. One's opponent may indeed, as a consequence of change in impulse, be found replying to argument in the words of Mr. Drinkwater to the politician:—

> "You say a thousand things,
> Persuasively,
> And with strange passion hotly I agree,
> And praise your zest,
> And then
> A blackbird sings, or fieldfaring men,
> Ghostlike, with loaded wain,
> Come down the twilit lane
> To rest,
> And what is all your argument to me."

But it *is* maintained by those who believe in the universality of the scientific method that as soon as one seeks to know or to

describe any field—æsthetic or other—that is the tool to be used. This claim is often contested in consequence of a narrow and somewhat Manichaean view of science as restricted to non-human objects. The ethical neutrality of the method is supposed to imply limitation to an ethically neutral subject matter. I cannot help feeling that this is the basis of Professor Bosanquet's opposition when he writes ". . . in Sociology we shall not, I presume, adopt the methods which embody the prejudice that natural science is the model of research. We shall realise that mind is nearer to mind . . . than to matter."* And, again, when he speaks of considering "History as the treatment of what has human interest, while Science deals with nature abstracted from man."† This attitude seems to come from failure to realise the descriptive nature of the sciences. I shall, therefore, first of all try to show that "description" of an unanalysed field of primary fact is all that is attempted in the physical sciences. I shall then urge, as a consequence of this, that the method is applicable to the primary facts in any field. And, finally, I shall indicate the orientation of philosophical problems which follows from this view.

I.

In speaking of science as descriptive I must first guard myself against the verbal objection which might be raised that this renders science purely retrospective. A descriptive formula, like Boyle's law, can become—by the addition of some *a priori* principle—a prophecy as well as a summary. And the explanatory view of science is in precisely the same position as the descriptive in needing some *a priori* principle to effect the change. The difficult question as to what that principle is lies beyond the range of this paper. Furthermore, in speaking of science as descriptive, I am not subscribing to the view that it

* *Social and International Ideals*, p. 40.
† *Op. cit.*, p. 28.

is denuded of reference to anything objective; that is, I cannot see any sense in the notion, which some of the exponents of description have come very near expressing, that science is "descriptive" and yet not descriptive *of something*. It is easy to understand, however, how doubt as to the objectivity of what Professor Nunn has called the "secondary constructions" of science should have led to doubt of the objectivity of the whole. The "joyful overestimation" of physico-mechanical explanations of the world by the French encyclopædists of the eighteenth century had a great influence on the setting up of substance naturalisms in the nineteenth. And for these, the immense success of molecular physics had given a partial warranty. But the final victory of the destructive criticism levelled against them by writers like Professor James Ward has given to the "critical naturalisms" which followed, the air of being attempts to save something from the shipwreck of naturalism. At first, as was natural, the loss of ontological prestige suffered by the secondary constructions of science raised doubts not only of naturalism but also of the whole scientific method. It is a curious fact that the period of extreme anti-scientific criticism came just when the triumphs of the scientific method were most patent. There is a distinct parallel in this to that moment in the history of mathematics when, in spite of Berkeley's legitimate gibes against fluxions, the differential calculus was providing exact and epoch-making results. In each case it has proved that we can retain the results; the apparent inconsistencies in the methods of attaining them being due to incorrect views of what those methods really were.

It was not, however, until the beginning of the twentieth century that any exact estimate was made of what was, and what was not, left by criticism. It can now be seen that the more enduring part of the critical work was to bring the difficulties in the traditional notion of substance into the light of day, and to exhibit the secondary entities of science as

constructions set up for the economical description of the field of "primary facts." Thus, for Hertz, the main process in scientific method is the comparison of a system, A, of objective fact—which he calls the realm of "things"—with a system, B, of symbols or constructed representations which we make of things. "We form for ourselves," he says, "images or symbols of external objects; and the form which we give them is such that the necessary consequents of the images in thought are always the images of the necessary consequents in nature of the things pictured."* So long as, for various reasons, doubt could be thrown on the objective reality, not only of region B but also of A, science was left suspended in mid-air, being representative of nothing in particular. *But the support afforded by the emergence of various forms of critical realism soon made itself felt.* In his important essay, *The Aim and Achievements of Scientific Method*,† Professor T. P. Nunn built, on the basis of the work of Dr. G. E. Moore and Mr. Russell, his claim that science is one of several alternative processes of rendering "primary fact" intelligible by means of secondary synthesis; and that it is differentiated from the other possible processes by being based on *no other motive* than the desire to render such primary fact intelligible. In other words, the secondary constructions of science are distinguished from those, for example, of animistic magic by the ethical neutrality of the impulse which produces them.‡ *In the special sciences neither analysis, nor inquiry into the nature, of the primary facts upon which they build is undertaken.* Setting aside such questions, therefore, for the moment, it is clear that the lasting part of the movement against the hypostatisation of entities expressed little more than had been well realised in practice by scientific workers themselves, before they attempted to erect crude philo-

* *Mechanics*, Introduction, p. 1.

† Published in 1907: and now, unfortunately, out of print.

‡ *Op. cit.*, pp. 46–59.

sophical positions upon their results. Thus Galileo's concentration on the problem of *how* bodies fell, instead of on the more ambitious *why*, was a beginning of the descriptive method. Mach contends that Newton used force as merely a conceptual instrument; and Black was apparently aware that "caloric" was rather his invention than his discovery.* Many similar examples could be given from scientific history, but enough has been said to show that the movement, if confined within its legitimate limits, was in no essential anti-scientific. It was, in fact, correlative to that movement in mathematics which has made it clear that the numbers, points, functions, etc., which our propositions seem to be about, are not real entities but constructs.

This has made an end—not to all basing of philosophy on science, but to preoccupation in such constructions with the *results* momentarily supposed to have been achieved by science rather than with the *method* of attaining those results. The substance naturalisms arose out of the promotion of empirical generalizations such as the conservation of mass to philosophical rank. It was assumed (1) that an observed constant quantity could be taken as indication of an inferred persistent entity, and (2) that the *generalization itself* could be raised to the status of a universal *a priori* law.† Neither of these assumptions is necessary to science in its own domain. This explains how it has come about that the empirical generalizations of science have remained standing after the collapse of the philosophical systems insecurely raised on them.

But before we can estimate the truth of the claim that what can profitably be transferred from science to philosophy is its method, it is necessary to know what the method is. And a closer view of it shows clearly, I think, its non-legislative character. For it consists in the application, for ethically

* T. P. Nunn, *Proc. Arist. Soc.*, Vol. XII, p. 52.

† See Russell, *Mysticism and Logic*, "Scientific Method in Philosophy, pp. 104, 105.

neutral descriptive purposes, of two processes to the "flux of perceptions, sensations, and emotions," and to the relations between them discovered by induction, which form the primary field: (a) *Abstraction*, by which is meant that act of comparison which leads to the noting of similarities the frequent repetition of which, made under varying circumstances, induces a neglect of the inconstant and a stressing of the permanent features. So arises the concept. As the need arises more and more complex concepts are set up, the practical advantage being that it enables immediate experience to be handled with greater ease. (b) *Generalization*, or the noting of analogies and consequent focussing of attention on the invariant relations implied in analogy. Thus the invention of ordinary algebra involves the recognition of analogies between various arithmetical operations in spite of the diversity of the numbers used in them. In the same way Cartesian geometry makes use of the analogy between algebra and geometry; vector analysis, that between lines and forces, surfaces and moments, etc. In fact, all applications of mathematics to science rest on analogies between natural phenomena and the operations of some calculus.*

The connexion between scientific "constructions" and these two processes of successive abstraction appears most clearly in work of the type of Clerk Maxwell's. Maxwell claimed that scientific progress depended on the discovery and development of "appropriate representations" of facts. In his mathematical treatment of Faraday's notion of lines of force he constructed a mechanical analogue in terms of an incompressible fluid and certain assumed resistances. And this he put

* In *Erkentniss und Irrtum*, Chap. XIII, Mach puts forward the view that all such reasoning does not belong to the domain of formal logic, but to that of psychology. This attitude comes, I believe, from the error of assuming that because its *origin* can be traced in psychological factors like comparison, therefore its *nature* is psychological. In the same way it might be urged that, because geometry had its origin in land measurement, therefore it is an empirical science.

forward not as having objective reality, but as being a means of readily grasping the electrical phenomena concerned. This method runs through all his work. In a later paper he created the extraordinary electro-magnetic model made up of liquid vortices and friction wheels working within cells with elastic sides; and he applied the same analogical method to the kinetic theory of gases. He makes it quite clear, at any rate in his earlier papers, that he intends by physical analogy that similarity between the laws in two domains of experience which enables light to be thrown on one domain by reference to the other. The utility of such analogues in simplifying the labour of description consists in its enabling one to say that a fact α comports itself in many or all of its features like an old and well-known fact β. But the construction of models is at once followed by the second of the above processes, which leads directly to formalization. We may illustrate this by reference to the various successive theories of light. The concepts used in those theories—corpuscles, elastic-solid ether, electro-magnetic medium—have possessed widely different "characteristics" (to use Frege's expression); but the equations expressing the relations between them have possessed similarity of form. A formalized science lays emphasis on the invariant relations. The fact that Maxwell could construct a hydrodynamical model to illustrate electro-magnetic phenomena simply meant that there existed differential equations which would represent the relations in both fields. And the utility of such models is in enabling us to reach a descriptive mathematical system of a more general form than could have been developed from consideration of either field separately. This process soon showed itself in Maxwell's own work. For, as Boltzmann has pointed out, in Maxwell's later papers and in his text-book the formulæ more and more detach themselves from the models.

Such deliberate freeing of the descriptive scheme from particular constructions is made possible whenever one of two analogous fields is capable of very formal treatment. In this

case Maxwell was able to pass from his models to the elaboration of his celebrated equations on account of the abstract form in which dynamics had developed after Lagrange. This utility of models as a preliminary step towards formalized description is apparently little realised. Thus P. Duhem, one of the clearest exponents of the descriptive and ultimately formal nature of the physical sciences, complains in his book *La Théorie Physique* of the multitude of models set up by Lord Kelvin and other physicists. He does not seem to have realised that such models are a step towards exactly the formalism he describes. In a similar manner it is sometimes urged that science cannot be purely descriptive, since models are so widely used. Once it is realised that the line of progress is from indirect description by means of models to a final abstract and purely formal one, these difficulties disappear. And it becomes obvious what Hertz meant by thinking that science should seek ultimately "to represent nakedly by equations the phenomena directly observed without the variegated garment of hypothesis with which our fancy clothes them."*

If this view of the evolution of the physical sciences is a

* A distinguished opponent of this view is Professor Schuster, who looks "with the gravest concern on a growing school of scientific thought which rests content with equations correctly representing numerical relationships between different phenomena, even though no precise meaning can be attached to the symbols used." (Preface to *Theory of Optics*.) The mistrust here expressed is probably due to two factors: (1) First-hand knowledge of the extreme utility of mechanical or other models in research. This goes without saying. But as Duhem remarks (*loc. cit.*, p. 42), "Audacious explorations, which have greatly contributed to the progress of geography, are due to adventurers who sought the land of gold; that is not a sufficient reason for placing Eldorado on our planispheres." (2) Dislike of methods which lead to formal conclusions incapable of any mental image. But generalized symbolisms also lead to a freeing of the abstract imagination for the providing of just such novel fundamental hypotheses as are needed in modern "micro-physics." I have given a short analysis of one cause of the common-sense repugnance to such methods in "The Neglect of the Work of H. Grassman," *Monist*, Vol. XXVII, January, 1917.

true one, we ought to find at the present time sciences in all stages of growth, just as one sees in an oak-wood illustrations of every stage in the progress from an acorn to the fully developed tree. The oak in its maturity will be represented by geometry, in which the original need for empirical observation has ceased, induction having given place to deduction. "It may be regarded as the type towards which each department of science tends to conform as it becomes less dependent at every point on purely empirical elements."* Mechanics is scarcely less rational than geometry. Chemistry is making progress in that direction. Whilst the other end of the scale is occupied by sciences, such as certain branches of meteorology, which are still in the classificatory stage.

To sum up: the scientific method can be exhibited as what William James called man's "substitution of a conceptual order for the perceptual order in which his experience originally comes." Empirical science discovers relations existing within that perceptual order. But their direct description is in general a hopelessly complicated problem. A model conceptual world is therefore constructed to facilitate the description. Professor Whitehead has expressed most clearly the criterion of success in performing this task; which is "that we should be able to formulate empirical laws, that is, statements of relations connecting the various parts of the universe as thus conceived, laws with the property that we can interpret the actual events of our lives as being fragmentary knowledge of this conceived interrelated whole."† For the domain of ordinary life simple conceptions, such as that of "things," are sufficient. But as experience in any domain is extended, the conceptual scheme is modified; the principle on which the conceptual entities are set up being that the required relations between them should be as simple as possible. And

* E. W. Hobson, *Science and the Nation*, p. 82. *Cf.* Galileo's aphorism "The Book of Nature is written in characters of geometry."

† *Organisation of Thought*, p. 109.

that is why "physicists and chemists have dissolved the simple idea of an extended body, say of a chair, which a child understands, into a bewildering notion of a complex dance of molecules and atoms and electrons and waves of light. They have thereby gained notions with simpler logical relations."* From the point of view of the special sciences the last step in the process has been made when the laws in any perceptual field are completely represented by a generalized and purely deductive scheme.

The final crystallizing out of a purely logical scheme, B, of which we have *a priori* knowledge must not, however, blind us to the empirical nature of the *process* by which it has been reached. A striking example of what happens if this is forgotten is provided in the now discredited Principle of Permanence of Form, which results from the promotion of the empirical method of "generalization by analogy" to the rank of an *a priori* principle. Furthermore, in the synthetic development of a special science we are not concerned with the analysis of the perceptual field itself, but accept as "given" the often complex "facts" of the particular domain. And it is precisely this singleness of purpose, in leaving on one side any question about the ultimate nature of the primary data, which renders the method applicable to any domain of experience. A defence of this thesis necessitates, I am afraid, a reference to widely different fields; but this I will try to do as shortly as possible.

II.

The most obvious illustration is provided by the biological sciences. Here the "facts" to which the method is applied are of a different order from those of the physical sciences; and the final stage has only been reached in a few, very limited, branches. But the progress—by the setting up of appropriate concepts, such as "species," and of working hypotheses, such as

* *Op. cit.*, p. 131.

"Mendelian inheritance,"—is (as before) a passage by successive generalization from a purely empirical towards an abstract deductive science. In the preface to his *Essais de Synthèse Scientifique*, E. Rignano writes as follows of the rôle of the "theorist" in the sciences: "Everyone realises how much this theoretical elaboration, performed by means of analyses and comparisons, of generalizations and hypotheses controlled and verified by correspondence of facts with the results of the reasoning, is useful and necessary if one wishes to reach a progressive systematization and an ever more synthetic vision of the confused mass of facts that experimentalists pour daily in a continuous stream into the scientific market." In the physical sciences this is acknowledged, he says; and he seeks to rebut the notion that the work of the theorist in biology or sociology is an intrusion.

There are, however, as Rignano observes, certain stages in any domain when only non-mathematical theoretical treatment is possible. If the view of scientific method which I am here advocating is correct, elaboration of the crude preliminary concepts will ultimately enable such treatment to be replaced by a formal mathematical one. Mathematics is only inapplicable when the observed relations (whether qualitative or quantitative) are so complex that the mathematical means of expressing them either do not exist or are too intricate for practical use. One type of the description looked forward to was well expressed by Mach in his hope that "at some future day, a mathematician, letting the fact continuum of embryology play before his mind, which the palæontologist of the future will supposedly have enriched with more intermediate and derivative forms . . . shall transform, by the variation of a few parameters, as in a dissolving view, one form into another —just as we transform one conic section into another."* It is easy to imagine the pleasure with which Mach would have

* *Popular Science Lectures*, p. 257.

received a copy of Professor D'Arcy Thompson's *Growth and Form*, which abounds in beautiful examples of morphological description developed in the exact spirit of these words.

The extension of such methods to every branch of biology is, however, widely doubted. It is held that certain fields do not, by their nature, admit of the employment of a calculus. By this may be meant, merely, that for the time being a calculus cannot be set up in those fields. But more has often been claimed, namely, that mathematics is a tool *essentially* incapable of completely representing the relations between biological facts. This view is usually based on one or other of two misconceptions: (*a*) An example of the first of these is Minot's assertion that "the observational basis of mathematics is, psychologically speaking, very minute compared with the observational basis of even a single minor branch of biology . . . while, therefore, here and there mathematical methods may aid us, we need a kind and degree of accuracy of which mathematics is absolutely incapable." Here, of course, it is wrongly supposed that mathematics is an inductive science. (*b*) The second misconception is due to the instinctive feeling that however analogous to mathematical form a living form or phenomenon appears, yet its nature as a living object is somehow bound up with its departure from mathematical regularity. Professor D'Arcy Thompson discusses this question,* and turns the tables thus on his opponents: "There is no such essential difference between these phenomena of organic form and those which are manifested in portions of inanimate matter. No chain hangs in a perfect catenary, and no raindrop is a perfect sphere: and this for the simple reason that forces and resistances other than the main one are inevitably at work. The same is true of organic form, but it is for the mathematician to unravel the conflicting forces which are at work together." In fact, discrepancies are the rough edges of the building, showing where

* *Op. cit.*, p. 721.

advance is next to be. The instinctive objection to mathematical treatment we are here dealing with is, as often as not, an objection to rationality altogether. Thus Bergson's sweeping and comically inaccurate statement, "Calculation touches, at most, certain phenomena of organic destruction,"* is only made because it is thought necessary for living freedom. Once it is realised that mathematical representations are not legislative, but descriptive of whatever is; that when facts escape the mesh of the equations, modification of the latter is induced so as to take in *them* in turn; then the supposed shackles of the method are seen to be illusory.

In passing, it may be noted that a view of the subject of a recent symposium is provided at this point. For it is obvious that, if we accept Dr. Haldane's distinction between the conceptions or working hypotheses which we use in interpreting reality and that reality itself, and if we confine ourselves to the former, then the question of the reducibility of the concepts used in the physical, biological, and psychological sciences becomes one of minor importance. The utility of a set of concepts, whether applied to its own field or to another, is judged solely by its power of leading to complete description. Cross-fertilisation is often effected by applying the concepts of one primary field, X, to another, Y. But in passing by analogy from one field to another, two separate processes must be distinguished, namely: (i) actually creating an analogy between a "primary object" and a concept by varying and modifying the concept; and (ii) recognising whether or not there is an analogy between primary objects in two fields. It is the first of these which is used in the setting up of conceptual models in a single field. The second is of great use whenever an analogy exists between objects in two fields, X and Y, to one of which, X, there has already been applied a conceptual scheme for descriptive purposes. In this case the analogues of the concepts

* *Creative Evolution*, p. 21.

of that scheme in Y often provide a means of introducing exact description into Y. It was, for example, in this way that potential, which had been developed as a concept in the domain of gravitational attraction, was transferred to the domain of electricity—together with the mathematical methods connected with it in its first domain. It is a natural consequence of the fact that the physical sciences already possess mature and generalized descriptive schemes that biologists should seek aid from them in developing their own. And this makes it clear why they will continue to find reference to the physical sciences a fruitful methodological principle, however solemnly philosophers wag their heads at it. Yet, useful as it may be to "carry over" concepts from one domain to another, it is a far cry from this to assert the reducibility of *all* the categories of one domain to those of another. To the scientist the latter is an issue subsidiary to his main aim of complete and compendious description of any domain by means of whatever concepts can best accomplish that aim.

What has been said of biology applies also to the field of political theory. But in this more concrete domain non-mathematical elaboration takes a larger place. The thesis I wish to maintain, however, is that to this domain also the method, as opposed to the results, of science is directly applicable.

There are two things which will serve, I have no doubt, to discredit this claim. First, the crude attempts which have previously been made to erect wide syntheses on the basis of scientific *results:* I need only mention economic materialism and Spencer's use of what he called the Persistence of Force as a means of developing a "scientific" politics. And, secondly, the already existing abuse of analogy in political theory—as exemplified by the forcing of the concept of social "organism" beyond its legitimate limits. It must be granted at once that any method which makes use of analogy in its setting up of appropriate concepts is full of danger. But if the representa-

tive nature of what is being done is fully realised; if it is remembered that *the reference is always back to primary fact*—then the method is sterilised. For the synthesising concepts then merely assume the function of tools for the grouping of known relations or for the discovery of unsuspected ones. And the method becomes no more dangerous than induction.

The application of the descriptive method to political theory has two important consequences: (1) In the first place, it cuts the idealising; it seeks to describe, for example, the state as it is. Professor Bosanquet has complained that his critics fasten on the defects of states which belong to them, "not in so far as they are states, but in so far as they are not states." And his complaint is verbally justified, since to him The State is something far removed from any existing state. The Hegelian State, whose defining mark is sovereignty —the rational expression of the nation whose citizens it should rule as our human reason should rule our lesser faculties—may be *the* state in some fairer sphere. But the wielder of the descriptive method is not interested in "imaginary commonwealths." He is painfully aware with Professor L. P. Jacks that the states of to-day ". . . instead of being wiser than individuals often perpetrate follies of which the least intelligent of their members would be heartily ashamed." And he seeks a state-theory which will incorporate such primary facts, and will avoid the disastrous identification of the state and society to which monistic presuppositions inevitably lead. Such a theory will be based on the observation of existing states and on the elaboration—precisely as in the natural sciences—of concepts capable of their compendious description.* Political theory built up on the basis of the scientific method will, then, be a "realism" in Mr. J. W. Scott's sense; it will

* I have given elsewhere a detailed example of the application of this method to one branch of political theory. See "International Politics and the Concept of World Sections," *International Journ. of Ethics*, January, 1919, pp. 125–144.

quite consciously be, in his words, "a picker up of unconsidered trifles."* But the trifles are factual trifles, matters of some importance to those who seek to build a state-theory which will serve in the street as well as in the study. (2) In the second place, the method avoids the hypostatisation of the concepts used—such as, for example, that of a general will. In current "political philosophy," this is elevated to the status of a metaphysical entity which, however, is usually found, as a reviewer in the *Nation* has lately remarked, to be "largely in agreement with the will of the philosopher who appeals to it, but is otherwise not empirically discoverable." If we set out to give a frankly descriptive account of politics, we shall recognise from the outset that the concept of a general will is based on analogy with the individual will. We shall, therefore, be forewarned against forcing the analogy beyond its legitimate limits; and hence against promoting it, by arraying it in capital letters, to the rank of an entity hovering about all human collections whether they show characteristics of will or not. We shall regard it merely as a convenient concept in terms of which to define collections possessing certain attributes. Thus, what makes a "group" out of an aggregate of individuals—a cricket team out of a casual collection of people—is the possession of a common purpose. And once we regard groups in this way as what Mr. Graham Wallas

* *Proc. Arist. Soc.*, 1917–18, p. 228. In this paper Mr. Scott claims that what is common in the application to politics of the philosophies of M. Bergson and Mr. Russell is their realism. For realism loves the given. So M. Bergson goes directly to the uncontaminated real by means of intuition, whilst Mr. Russell takes the unsophisticated reality of vital impulse as the basis of social reconstruction. Now if we can consider Mr. Russell as an adherent of the descriptive view of science, it is clearly a mistake to group him with M. Bergson. For, speaking broadly, Mr. Russell regards intellectual constructions as descriptions of what is or what might be; and creative impulses as the basis for action. Whereas M. Bergson regards the intellect as a tool for practical activity; and intuitional impulse as the means of reaching what is. One view is thus an inversion of the other.

calls "will-organisations," the old puzzle as to whether the group has a "real personality" or is merely a "legal fiction," loses its terrors. The group is a construction which is set up for a definite purpose—the attainment of the ends of the group—just as a molecule is a conceptual construction set up for the purposes of exact description. The passage from this (with its constant reference back to the primary fact of existing groups and their finite purposes) to the General Will as a metaphysical entity is like the passage from mind to Mind, and leads in each case to an other-worldly absolutism.* This step seems to me to depend in part for its plausibility on failure to recognise the analogical origin of the concept, and its consequent dangers.

In the allied field of history the situation is very similar. As before, any claim to a "scientific" history has to face the well-founded suspicion aroused by attempts to apply the results of particular sciences to the whole field. Buckle's over-emphasis of physical results and consequent account of "a world from which men and women are left out" exemplifies the danger of this. It is not, again, results but methods which can profitably be transferred. Seeley came near to expressing this when he complained that, though historians have given to history the conscientiousness of science, they have not yet given it its arrangement. For it is precisely in the orderly and economical arrangement of facts that the power of the scientific method lies; its effectiveness comes from its deliberate choice of a convenient conceptual symbolism. But once more it is necessary to insist on the presence of a body of primary fact to which the conceptual scheme is constantly referred. History is not a mere playground for synthesising fancy. Croce's notion of it as the form in which the full reality of existence is presented to

*It must be acknowledged that it is sometimes quite frankly admitted that such political philosophising neither gives, nor is intended to give, any guidance in social action. *Cf.* Dr. McTaggart's *Studies in Hegelian Cosmogony*, pp. 195, 196.

consciousness—"Not the story of life, but the story immanent in the fact that life is an unfolding and expression"*—amounts to a denial of the distinction between *events* as existents independent of interpretation, and *meaning*. Now unless we cling firmly to the existence of a field of primary fact quite independent of how we interpret or classify it, it seems to me exceedingly difficult to guard against the basing of historical proof on inherent fitness rather than on external testimony. "A spiritual enlightenment from within," said Mr. Balmy, the Erewhonian, giving his evidence about the balloon ascent, "is more to be relied on than any merely physical affluence from external objects."†

On the other hand, history is not a mere conglomeration of isolated primary facts; to constitute itself a science it "must elaborate the raw material of facts. It must condense them into manageable form by descriptive formulæ, qualitative and quantitative."‡ And this elaboration will be performed by the setting up of appropriate conceptions based on analogies. Such concepts are, of course, already in use; but the fact that they are not as a rule deliberately constructed leads the careful historian into endless circumlocutions and saving clauses. He finds it necessary, for example, in using the conception of "periods," such as the Middle Ages or the Renaissance, to guard himself against vaguely realised dangers. A conscious use of analogy here and when speaking of the "decline" of a state, the "culmination" of a movement, and so on, would be a gain in clearness and safety. A bold attempt by the historian to bring out his methodological apparatus into the light of day, and to attend to it explicitly as the machinery of description, would enable him to face Browning's question "Is fiction which makes fact alive fact too?" with equanimity. For he could answer: No; the fictions are only, in the first place, conceptual construc-

* H. Wildon Carr, *The Philosophy of Benedetto Croce*, p. 194.
† Samuel Butler, *Erewhon Revisited*, p. 171.
‡ Langlois and Seignobos, *Intro. to the Study of History*, p. 264.

tions by which we are led to meaning. . . . . And by meaning nothing more is meant than the rich, concrete inter-relatedness of the factual domain. Facts may be the "dross of history," but in no other sense than that they form the primary material; they are not left behind in the crucible, but fused in the result. In making full use of the scientific method the historian would not be departing from all precedent, but only following Lord Acton's advice: "If men of science owe anything to us, we may learn much from them that is essential. For they can show us how to test proof, how to secure fulness and soundness in induction, how to restrain and employ with safety hypothesis and analogy."*

There is one further subject I should like to touch upon before concluding this section. The domain of æsthetics has come to be a sort of last refuge from the intrusion of the sacrilegious scientist; it is apparently supposed that he cannot live in the rarefied atmosphere in which discussions on art usually take place. In this domain especially (though it is also true of others) we must distinguish between man's impulse to the activities with which the domain is concerned, and his conational impulse when faced by his experiences there. It is with the field of the latter impulse that we are concerned. Sometimes it has been contended that the intellectual interpretation of art is a deadening and illegitimate intrusion of rationality beyond its own sphere. If this is only a modest bow of acknowledgment to the artist's claim that

> "The rest may reason and welcome,
> 'Tis we musicians know."

then it is no more than is proper. More, however, is usually implied. (*a*) Sometimes what is meant is that it can be of no earthly use to the artist. This, even if true, is irrelevant, since æsthetics does not primarily claim to be a guide to practice. But it is not true. Professor Sir A. Quiller-Couch cannot

* *The Study of History*, p. 54.

sustain his protest that "Beetles may be classified; and to have them classified is a genuine advance of knowledge. But if you had to *make* a beetle, as men are making poetry, how much would classification help?" For he is forced in the sequel to answer his own question. "In treating of an art," he writes, "we classify for handiness, not for purposes of exact knowledge."* Yet what is handiness if not the avoidance of loose and inconvenient ill-remembered knowledge? It is quite true, as he says, that genius uses our best-laid logic to explode our formulæ. But it uses, note you, our best-laid logic—not our woolly, inexact, unclassified cerebrations. We are here, of course, hovering on the edge of that dreadful old discussion about science and art. It is not necessary, however, to get entangled in it; all we need to remark is that such protests as the above amount to nothing more than the assertion that, *from the point of view of the creative artist*, there is a good classification and a bad one: a good when it is for use as a tool, a bad when regarded as an end in itself. As Dr. Santayana has wittily said, "An artist may visit a museum, but only a pedant can live there." Yet unless we take the romantic view that all works of art are the spasmodic results of miraculous powers sent direct from heaven fully-fledged, we have to acknowledge that they grow out of rational, organized effort. Inspiration comes with preparedness; and scorn of the latter is as myopic as the scorn of a certain type of "practical man" for pure science. Interpretation by the thinker may then, at its happiest, be no intrusion of a cocksure intellectualism, but (with two attendant conditions) a human aid:—(1) The interpretation must be founded on the primary fact of genuine æsthetic appreciation, and (2) it must not weave a shroud of rigid *a priori* forms, but a wedding garment of possibilities. (*b*) Sometimes, however, the disclaimer amounts to a denial that any science of æsthetics is possible at all.

* *The Art of Writing*, p. 105.

At this point we are confronted by our old problem. It is obvious that, faced with works of art, men do actually have many and varied æsthetic experiences. That is our field of primary fact. The question of the possibility of a science of æsthetics reduces, then, to the question of whether these experiences can be described and correlated in an orderly manner. As the primary facts contain personal experiences, it is sometimes supposed that the difficulty in obtaining a concensus of opinion on them means that there is no objective foothold at all. It is equally difficult to obtain a concensus of opinion about billiard balls as sensory objects; but that does not prevent the development of a mechanics of billiard balls. Mr. Clive Bell gives short shrift to such scepticism. "Yet, though all æsthetic theories must be based on æsthetic judgments," he says, "and ultimately all æsthetic judgments must be matters of personal taste, it would be rash to assert that no theory of æsthetics can have general validity. For, though A, B, C, D are the works that move me, and A, D, E, F the works that move you, it may well be that x is the only quality believed to be common to all, and absent from none, of the works in either list. We may all agree about æsthetics, and yet differ about particular works of art. We may differ about the presence or absence of the quality x."* The sceptic might well accept this, but demand the instant production of x. There is one way of satisfying that demand which we are precluded from using: that is the assertion *a priori* of an x which is the basis of all æsthetic satisfaction. If an assertion of the type "All art is grumph" (to use Rupert Brooke's sarcastic phrase) is ever possible, it will be the product, the final descriptive formula, of a long stage of conceptual ordering of the primary field. It would be absurd of me to attempt to produce such a complete final formula. But I shall try to show that a beginning can be made to such an enterprise, in the hopes of creating a presumption in favour of its further possibilities.

* *Art*, p. 10.

It is, I believe, a common experience that in our first æsthetic satisfaction the representative element plays a large part. On this, presumably, Plato built his much-abused view of the fine arts as imitation. But if the quality of producing æsthetic satisfaction comes, at any rate in part, from objects which have the quality of being representations of existents, it is representation of a peculiar kind. This has been admirably expressed in Mr. A. McDowall's recent book *Realism: a Study in Art and Thought.* For the representation aimed at is not literal imitation, or *trompe-l'œil:* the latter aims at the most *lifelike* impression, like the painted grapes in the Greek story; whereas true representative art aims at the most *living* one, at producing in the spectator a feeling of enhanced vitality. It seeks, in Faguet's words, "to choose without passion, without inclination for anything but the truth, the most significant of the thousand details of reality and arrange them in such a way as to produce in us the same impression which the real itself produces, only more strongly." Now it is clear that, according to this, scientific hypotheses have precisely the function of representative art. By each the field of bare awareness is "ordered" and rendered more actively present to attention. Indeed, Mr. McDowall's description of a realistic artist applies equally to the scientific theorist: "He is an observer, but he is not a reporter. He does not copy, but he creates a world which refers us back to our own world and shows it to us more truly." The introduction of creative elements is not a falling away from pure representation. For what constitutes the representation in each case is the ultimate reference back to the world of primary fact. The particular conceptual construction, or the personality of the artist, will decide the form of the approach to reality; that which renders it representative is the recognition that there is a reality to approach.

There are, however, very serious objections to confining our x to the quality of representing existents. Mr. Clive Bell's vigorous polemic forces us to recognise the equal claim of

"form." "A painter too feeble to create forms that provoke more than a little æsthetic emotion," he insists, "will try to eke that little out by suggesting the emotions of life." And, in the spectators, the tendency to seek behind form the emotions of life is a sign of defective sensibility always. "Instead of going out on the stream of art into a new world of æsthetic experience, they turn a sharp corner, and come straight home to the world of human interests . . . . no new thing is added to their lives, only the old material is stirred."* At its worst we have the sensational novel, the problem picture, and onomatopœic music —all forms of what Swinburne called "electrified stupidity." No wonder then that, in reaction from this, men of sensibility claim that maturer appreciation seeks the cold peaks of formal art and not the cosy valleys. "If I stand before a work of art," writes Mr. Galsworthy, "vibrating at sight of its colours and forms, if ever so little and for ever so short a time, unhaunted by any definite practical thought or impulse, to that extent it has . . . . linked me to *the universal* by making me forget the individual in me." But in our righteous indignation at the pseudo-realism of half a century of Academy art (in which every picture tells a story) we must not forget that a pure formalism cannot carry us the whole way. The fact that Mr. Bell, in his claim that art is significant form, has to qualify form by the adjective significant, lets the realistic serpent into his Eden. For if art is significant form, *of what* is it significant? If a complete answer to our rhetorical question is possible, it must be that art is form—significant sometimes of the world of existents, sometimes of the world of universals, and sometimes of both. In setting up this duality I have in mind some remarks of Dr. Santayana on music. Primarily our appreciation of music is based on existing bodily realities. "Its rhythms seize upon our bodily life," he says, "to accelerate or to deepen it." But that is not all, unless our appreciation is to be

* *Op. cit.*, pp. 28, 29.

a drowsy reverie relieved by nervous thrills." For music also deploys a sensuous harmony by a sort of dialectic," whose elaboration may exceed the synthetic power of all but the best trained minds.* And it is this second, universal, basis of representation which makes it possible to speak of a beautiful mathematical theorem; and which gives power and meaning to Professor Whitehead's high claim for what he calls that most austere of mental qualities, a sense of style—or, in other words, appreciation of form. If, then, it be true that Plato's mature philosophy "found reality, whether intelligible or sensible, in the combination of matter and form, and not in either separately,"† his contemned view of art is a more living thing than his critics have been willing to allow.

My object has not been to set up a body of æsthetic results (those, such as they are, may well be questioned) but only to illustrate a method. I have tried to show that, without any ultimate analysis of the primary facts in this field, an ordering of it is possible by the method of science; in other words, by the construction of concepts—such as "representation"—and of conceptual formulæ—such as "that the quality x which distinguishes a work of art is its representation of existents or of universals." The criterion for judging such a formula is not to be found in its inherent fitness, but solely in its capacity for ordering the field of primary fact.

III.

It is often readily enough conceded that where *quantitative* descriptive formulæ can be set up "All sorts of different phenomena, social, economic or physical . . . may have their variations expressed by the same equations precisely as they are subject to the same laws of the multiplication table."‡ What I

* *Reason in Art*, pp. 47, 50.

† Burnet, *Greek Philosophy, Thales to Plato*, p. 332.

‡ M. R. Cohen, *Journ of Phil.*, XV, 14, p. 367. In a recent paper to this Society (*Proceedings*, 1917–1918, p. 134), Professor J. A. Smith

have sought to show in this paper is that the scientific method can be of equal help in the setting up of *qualitative* descriptive formulæ. Throughout, however, it has been presupposed that, from the point of view of science, no analysis of the primary facts which form the data of each domain is necessary. That is a task for philosophers. But there are two philosophical issues which can be discussed without any further analysis.

In the first place it is clear that there may, corresponding to the field of primary fact, A, be diverging conceptual schemes, B_1, B_2, etc. The criterion used in the choice between such schemes is a pragmatic one; that scheme is chosen which serves most economically and exactly the purposes of description of A. But pragmatists, wishing to assert the universality of their criterion, try to force it on A also. The attitude of a scientific society to a member who applied the pragmatic method to his primary facts would be forcibly defined.

In the second place, it is sometimes asserted that the development of B gets in the way of our observation of A. Mrs. Karin Stephen's view is similar to this. For the process she describes as "the deriving of 'knowledge about' experience from actual experience" is very like the setting up of a conceptual scheme B descriptive of A. There is, however, a difference in that the special sciences usually start from data already much more complicated than the deliverances of what Mrs. Stephen refers to as direct acquaintance. But, setting

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denies that a "mathematics of intensity" is possible, on the grounds that attempts at such a thing "have plausibility only so long as analogy is mistaken for identity." But it has been shown above that, without vitiating it, analogy is involved in *all* measurement—in the measurement of divisible quantities in which "units" are possible, no less than in what Meinong has called "substitutive measurement," which is applied to intensities. And as Professor Dawes Hicks has pointed out (*Brit. Journ. of Psychology*, VI, p. 169), it does not follow that because there are no units of sensation, sensations are not measurable; any more than it follows that temperature is not measurable because there are no units of temperature.

that difference aside, Mrs. Stephen's contention is that in classifying experiences there is always a tendency to devote too much attention to the symbols which represent groups of experiences, to the neglect of the experiences themselves. "We slip insensibly," she says, "into the mistake of applying to the experience itself what really only applies to the symbols by which we represent it. . . . From this loss of contact with actual experience which results from our inattention and our preconceived ideas there follow the gravest results. . . . Armed with preconceived notions drawn from our knowledge about it, we hardly ever attend to an experience with open minds, or examine it without bias."* It must be acknowledged, I think, that there is a great deal of truth in this contention: it must be granted that the scientific method is like a well-sharpened razor—all the more dangerous for being effective. Anatole France has expressed, ironically, his sense of the reality of this danger in his dictum: *Les savants ne sont pas curieux.* There is an exactly parallel danger in the loss of appreciation which may follow obsession with knowledge about an art to the exclusion of its direct enjoyment. And in each case the only safeguard lies in what has been insisted on throughout this paper, namely, constant reference back to the primary domain. Nevertheless, I think that Mrs. Stephen, though she acknowledges its existence, has not sufficiently realised the magnitude of the aid afforded by "knowledge about" *to direct experience itself.* Radioactive materials presumably existed before 1900; but it required knowledge about to direct the focus of attention to the phenomena concerned. And this enriching of our observation of the world by knowledge about—whether explicitly as in a science, or implicitly as in what Professor Whitehead calls "the whole apparatus of common-sense thought,"—seems to me easily to outweigh the avoidable dangers.

We may now pass to the consideration of the place the view

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* *Proc. Arist. Soc.*, 1917–18, pp. 69, 71.

above developed assigns to philosophy. It will be clear, I hope, that my object in demonstrating the possibility of setting up special sciences in any domain, *previous* to any radical analysis of its primary facts, is to embroider the text of Mr. Russell that many of "the more ambitious and humanly interesting problems of traditional philosophy" must be attacked, if at all, empirically by the synthetic method of the sciences; the essential business of philosophy is analysis, not synthesis. The last stage in the erection of a special science is reached, as we have seen, when the laws in the perceptual field concerned are completely represented by a generalized and purely deductive scheme. For the philosopher, however, the work has only just begun. He has little interest in deductive series of propositions, and seeks to analyse the primary facts on which the special science is based. The philosopher and the scientist are therefore impelled in opposite directions. The one is always ready to complicate the primary object, say a chair, by the accretion of further hypotheses (of molecular structure, and so on) in order to reach simpler descriptive relations. The other sets out to analyse the primary object into its ultimate entities. In Frege's picturesque metaphor, science grows upwards with the increasing intricacy of a branching tree; philosophy strikes down to the roots.

Now, if this is a correct statement of the situation, it would appear that the method of the one would be the reverse of the method of the other; that science would be on the lookout for similarities and analogies in the world, whilst philosophy would seek for differences and distinctions. This makes "the method of philosophy" what Mr. P. E. B. Jourdain has called "the search for increased subtlety by emphasising differences in concepts and reasonings instead of analogy."*

From the point of vantage now reached we can, without

* "The Function of Symbolism in Mathematical Logic," *Scientia*, XXI, p. 2.

attempting to evaluate *results*, examine certain criticisms of the *method* as used in the typical analysis of this kind—the logical atomism of Professor Whitehead. In this, the field of primary physical fact is reduced to those entities which alone are left untouched after a radical analysis; and the "things" of the primary domain are then exhibited as logical constructs of these entities. The methodological principle involved is expressed in Ockham's razor. (*a*) One criticism sometimes urged against this method is founded on a confusion of the two processes here distinguished as scientific synthesis, which uses Mach's principle of ecomomy of thought; and philosophical analysis, using Ockham's principle of parcimony. The critic, noting the complexity of the logical constructions, urges that the principle of economy is violated. In answer it is only necessary to point out to him that whilst science is ready, for the purposes of economical description, to multiply conceptual entities unceasingly, the scientific philosopher seeks to limit his entities even with loss of economy in statement; and the two processes are not contradictory, but complementary. (*b*) Dr. Schiller has urged that the limitation of entities, according to the principle of parcimony, is a maxim of practical convenience, and so nullifies the claim to ethical neutrality. "To a non-human mind," he says, "that was not pressed for time but disposed of all eternity it would be unmeaning or repugnant."* But from what has been said above it is obvious that the principle of parcimony is not a maxim of "practical convenience." It is in fact, usually convenient to contravene it. If, for example, we always used Professor Whitehead's constructions instead of "things" our novels could only be read by those who "disposed of all eternity." And if we avoided the use of the entity "number," Jones minor's text-book of arithmetic would be weightier than Jones minor. In other words, in practical affairs, we emphatically do not (and never shall) use the razor

* *Mind*, N.S., vol. 24, p. 402.

to cut away our tables and chairs and numbers and electrons. If Dr. Schiller had claimed that the principle of economy is a maxim of practical convenience, he would have been right; but then it is applied only to field B—to those human products, descriptive formulæ. Ockham's razor, on the other hand, is an analytical weapon for removing from field A everything but the hardest of hard fact, however useful it may be. The principle is, in fact, an impractical maxim only applied in those moments of critical analysis when we desire to know what logically unjustifiable assumptions we are daily making from pragmatic motives.

In conclusion, it does not fall within the range of my subject to attempt an account or criticism of the results attained by the scientific method. But I should like to guard myself from being thought to imply that logical atomism, in terms (amongst other things) of *sensibilia*, is the only possible outcome of the application of the "reverse scientific method" to philosophical problems. It will, I think, be obvious to anyone who cares to examine it that the nature of the results reached by such a method may vary very widely indeed, depending on the point at which the analysis of the primary facts in *all* fields of experience comes to an end in the hands of the philosopher wielding it. Some form of pluralism it must be, by its initial presupposition of a primary domain of partial reals; but inside that limit wide divergencies seem possible.

Meeting of the Aristotelian Society at 22, Albemarle Street, London, W. 1, on April 7th, 1919, at 8 P.M.

VIII.—EMOTION AND VALUE.

By ALEXANDER F. SHAND.

1. *The Nature of the Value Attributed to External Things.*

WHEN we have reached the age at which conceptions of value have been developed and are freely attributed to things, there arise thenceforward conflicts among these conceptions through our belief that things have a real value and the successive and often very divergent estimates of this value. These changes of valuation underlie the development and decay of all our sentiments. Far from being uninfluenced by feeling,—so far as they are not conventions or concerned with the use or money-value of things,—these judgments are embodied in emotion and proceed from joy and sorrow, admiration and contempt, repugnance and disgust, hope and anxiety, satisfaction and disappointment. They form part of the trust in our friends and the suspicion and distrust of our enemies, and our faith in the destiny of human life. They are indispensable to our moral nature: its aspiration is an effort to hold to truer and higher values than our common sentiments represent to us; its shame and remorse recognise that we have fallen from them; its repentance holds the resolution to return to them. We can hardly overestimate the part which these conceptions play in directing our lives.

Yet the beginning of human life and, at least, the greater part of animal life subsist without the aid of these conceptions; the value of things precedes and is independent of them.

We must start from such facts as these of our mental life, and attempt to form a theory of value in agreement with them; (1) first assuming the independence of the value of things of

the changes of our conceptions about them; (2) the belief that there are real values to which our judgments try to approximate; (3) the fact that in correcting our first and impulsive valuations we think that the later are truer, where based on a more prolonged and intimate acquaintance with the things in question; (4) that all people come to recognise that their emotions and desires make some things appear more valuable than they really are; (5) and that the lack of other emotions and desires prevent them from realising the excellence of other things.

It has been a common reproach against psychological theories of value that these conflict with the preceding facts, making the value of things subjective and dependent on the fluctuations of our emotions, desires and sentiments. Thus early we have an expression of this psychological view in Hume: "Objects," he says, "have absolutely no value in themselves. They derive their worth merely from the passion."*

The difficulty in escaping from some form of psychological theory, which in the end, and however unwillingly, fails to account for the real value of things, is mainly due to an opinion widely held by philosophers that things can have no value out of all relation to consciousness or mind. While some maintain that certain qualities of things may exist independently of the minds that deal with them, it is difficult to extend this to include the quality of value. For if the value of a thing lies in its uses it can only have this value for minds capable of using it, and if it has value for itself, it can only have this value for minds capable of appreciating it for itself.

We shall, therefore, start from the assumption that external things have only value so far as they are in actual or potential relation to some mind or minds, and that all other things have value only so far as they are constituents or qualities of such minds. Our problem will then be to form a theory consistent

* Essays, *The Sceptic.*

with this assumption and our common belief that things have a "real" value.

In dealing with this problem we shall not be primarily concerned with the "extrinsic" value that a thing has through the use to which it may be put or as a means to other things, but we shall inquire into its "intrinsic" value—the value it has for itself,—on which the other depends. But we have to bear in mind that in the total value attributed to any given thing these two kinds of value are ordinarily combined in varying proportions. For however much we value a thing for itself it has its uses, and it is difficult to determine how much is due to the one source or the other. Thus, friendship is valued for itself, and our friends likewise for themselves, but should we so value them if they manifested no disposition to advance our interests?

In attributing value to things we do so either because we have realised this value for ourselves or because we adopt the valuations of those around us. We accept from others the importance of "honesty," "courage," "prudence," "moderation," "justice," "humanity," and other virtues, some of which we come later to realise for ourselves, and the great or useful qualities of character, as "perseverance," "firmness," "efficiency," "industry," and "capacity," for making progress. But are these virtues and qualities valued for themselves or for their uses, or for both? If they have no value for themselves, they are indispensable instruments for the achievement of our difficult ends, and some of them tend to be acquired by all our great sentiments.

The virtues and qualities of character, the importance of which is impressed upon us by others, are regarded as possessing not merely a value for ourselves, but a universal value. On the other hand, those things of which we first realise the intrinsic value through our own experience have their value at first confined to ourselves though we may afterwards extend it to others. The clearest cases where we make such judgments of

intrinsic values based on our own experience are where we love anything. In loving another human being we find out that he has a real and intrinsic value, but we do not therefore assume that he has the same kind or degree of value for others.

We often notice that when one person is trying to impress on another the excellence of some thing that he loves,—as the scientific man the intrinsic value of knowledge,—how incredulous is the ordinary man who does not love it. He can only be induced to allow that it may have some use, a concession that he will hardly extend to philosophy. Thus it seems as if loving a thing were a condition of our judging it to have intrinsic value, so far as such judgments are based on our own experience and not on suggestion or authority.

What then is this value which is a real quality of some things and not of others, which may be a real value for all men or for a few, or perhaps for only one? Is it a simple quality, like yellow, and therefore unanalysable and undefinable?* If it be such, we can only make the conception of it clear by directing attention to it in the things that possess it, and by contrasting them with the things that are without it or possess the opposite quality of "badness" or "negative value." There are many things that look simple and turn out to be complex. The quality "yellow" is not quite simple and unanalysable. On the one hand as "colour" it is identical with all other colours, and, on the other hand, as "yellow colour" it is different from them, and it cannot be in the same respect that it has these opposite relations to them.

If things have only value so far as they are in actual or potential relation to some mind or minds there seem to be several factors to distinguish, all of which are implied in the reality of their value. First, some mind must exist to which they are at least potentially related. Secondly, these things must have power to affect the mind, and this power is an essential

* See G. E. Moore, *Principia Ethica*, Ch. 1.

condition of their value; for if they leave the mind always unaffected, they are what we call "indifferent" or "valueless."

We may see this clearly in respect to external things to which we at present confine ourselves. The beauty of some things is a quality of value, but a first condition of its value is the existence of some mind or minds who can appreciate it, and for whom alone its value is real. This "appreciation" does not only mean that such minds can perceive beauty, but that they are capable of responding to its peculiar stimulus by feeling the appropriate æsthetic emotions. If they were capable of perceiving it, but incapable of being moved by it to any emotion whatever, and all other minds were the same in this respect, then beauty would be a quality altogether indifferent or valueless in itself, though it might still have some "extrinsic" value.

Now just as the thing which has intrinsic value for us must have power to move our emotions, so it will not be until it has produced this emotional effect that we shall "realise" or have the belief in its value—so far as we discover this value for ourselves. We indeed often acknowledge the value of certain qualities of character in a cold intellectual way, yet in such cases we have either realised their value in the way described at an earlier period, or we have accepted it through social suggestion. We are ready to agree that virtue or goodness has an intrinsic value; but when we come down from these abstractions to the particulars embraced by them, we find that those we believe in are supported by some emotional disposition. Thus we believe in "honesty," "honour," "truthfulness," and others, whether they are profitable to us or not. These "principles" of character are guarded by emotional dispositions, and as soon as any doubt arises as to our acting in agreement with them, some emotion tends to be aroused. Thus the thought of acting dishonestly would arouse horror or shame in honest persons. But with the man who is sometimes honest, sometimes not, and who does not believe in the intrinsic

value of this principle, the case is otherwise, and whether "honesty is the best policy" depends on circumstances, and its value as a means can be considered dispassionately. The intrinsic value of anything, when we realise it for ourselves, depends on the influence of an emotion on our judgment.

Now it is often said that, although emotions may be instrumental in eliciting judgments of value that the validity of such judgments is independent of the emotions. This general statement is one of those which, though it holds of many cases, is contradicted by others. It is quite easy to frame a proposition implying the value of something for us, in which the truth of the assertion is dependent on the emotion which has elicited it. Such judgments as "I admire you," or "I love you," or "respect," or "esteem you," are examples of such dependence. So also when we are attributing intrinsic value to any external thing, this dependence is implied, so far as our conclusion is true, that an essential condition of such value is the power of the thing in question to arouse some emotion in the mind.

What, then, are those emotions which tend to make us attribute intrinsic value to things?

It seems to be a fundamental law that (1) *the emotion of Joy tends to make us value the person or thing that causes it, and that when and so far as this joy is not felt for this thing as a means for some other thing, but on its own account, that then we value it for itself or intrinsically.* Now this judgment of value may not be present to consciousness, even after that period in the growth of the human mind in which conceptions of value have been developed. But it is still implied in this sense, that it is an integral part of every completed system of joy, and can be brought into that part of the system which is in consciousness by interrogation or reflection.* Thus if we ask a person

* See for the meaning to be attached to the term "emotion" and "system of emotion," *The Foundations of Character*, by A. F. Shand, B. 1, Chapters II and III.

who has shown by his expression and behaviour that he has experienced joy from the presence of someone else, whether he does not regard that person as having some value or importance for him, we get an answer in the affirmative. A second law is that (2) *the value attributed to an object of joy tends to be greater or less according to the intensity and permanence of the joy.* And in this term "permanence" we must include not merely the duration of this joy when it is first felt, but the capacity of the thing so valued to renew the joy time after time when it again becomes object of perception. But with prolonged and more intimate experience of every person and thing, other qualities are likely to become apparent opposite to those on which its intrinsic value depends. These qualities tend to arouse some one of a different order of emotions as repugnance, anger, or fear, which diminish instead of increasing the value attributed to the thing. Hence, there are apt to occur great fluctuations in the value attributed to the same thing at different times, especially where such things are very complex as in the case of human beings. Still, we do not think that the real value of the thing, though subject to change, must fluctuate in correspondence with these changes of valuation. We think rather that we have come to know it better, and can therefore judge better what its real value is. For the first valuation of a thing is different from subsequent valuations just because it is the first, and the emotion of it confines one to the immediate experience, whereas the later ones can sum up the earlier and obtain a more general point of view. We think we come nearer to a true judgment of what is the real value of the thing when we obtain this general point of view. We escape from the exclusive influence of the immediate emotion.

What then is the "real" value of the thing for us? If it is not to be estimated by the value it has at the moment through the exclusive influence of the present emotion, it must be estimated by its relatively permanent power to arouse emotions of a similar sort. For instance, a chief source of error

in the value attributed to things is due to the influence of novelty. We are deceived at first by novelty, and the value due to it we attribute to the excellence of the thing. And this means that the surprise it causes us at first intensifies the joy received from it, and therefore tends to increase the value attributed to the thing. Thus we cannot rightly value most things until the surprise at their novelty has ceased. But we attribute intrinsic value to novelty itself. We seek for change everywhere, and the things that have the greatest variety in themselves, and can surprise us the longest, we think have, other things equal, the greatest value. Thus the arts and sciences have perpetual sources of novelty, and may never become stale through familiarity. But through novelty even mediocre things appear to have a considerable value which soon wears off, because they have little variety in themselves.

Besides the emotion of Joy, so much intensified by surprise, there are other emotions having a similar tendency to attribute intrinsic value to the things which excite them. Of these, the most important are Admiration, Wonder, Satisfaction, Gratitude, and the painful emotions of Sorrow and Pity.

The painful emotion of Sorrow has been recognised by the general experience of mankind as having a great influence in instructing us as to the real value of things, as is shown by the common remark that we never rightly value a thing until we have lost it. Pity, too, helps us to realise the importance or value of the person pitied, but callous indifference to his sufferings makes us turn away from him as if he had no value.

Through Sorrow, too, we obtain that more general point of view from which we are able to estimate the permanent or real value of an object under varying conditions. We escape from the exclusive influence of a single emotion. For it is a characteristic of sorrow to re-excite the memories of the preceding joy, and to contrast the present sense of desolation with the recollection of those experiences in which the object was present to us, thereby affording us a general view of its power

over us under opposite conditions. For however highly a thing is valued through joy, if the sorrow at its loss has little intensity or permanence, this tends proportionately to diminish the preceding valuation, but in the contrary event to increase it. This general point of view is rendered more complete when not only sorrow succeeds joy, but joy, sorrow at the recovery of the object. The memories of the preceding states are brought to a focus, and the present experience is steeped in them. Thus we come still nearer to obtaining a true estimate of the sustained power of this object over us, which is an essential condition of its permanent or real value.

The succession and recurrence of joy, sorrow, and desire about the same object is conclusive evidence that we have come to love it, and a succinct expression of the manifold activities of love. We can therefore formulate this law of our judgments of value: (3) *Through love for an object, succeeding joy, sorrow, and desire, we tend to approach a truer judgment of its real and intrinsic value for us.*

When through our own experience we judge that certain external things have value for us in themselves we are not primarily concerned with the reality of their value for others. To judge rightly whether they have the same kind of value for other persons is an inference about their feelings that we are not often in a position to make. To judge whether they have intrinsic value for all men is an inference still more difficult to establish. What conceals this difficulty is the ease with which we make general statements about the usefulness and economic value of certain things, as that knives are useful to all men for cutting their food: the money value of a thing is as much its value for one man as for another. But when we pass from such extrinsic values to the intrinsic values on which these ultimately depend, the case is different, and the surest judgments we then form are those which concern ourselves. How much even these are liable to error we have already seen. If we next consider the nature of the evidence for such

judgments, we find that there is no necessity in them, that they are all contingent on experience, and the experience itself, especially where we are dealing with other minds, and the expression and behaviour by which they manifest the value of certain things for them, is often difficult to interpret with certainty. In the judgments that we make about the external things that have intrinsic value for ourselves, we can only lay stress on the consistency with which we maintain some of these judgments, after prolonged and varied experience of the things in question, as the surest evidence we possess of their truth. We seem to possess no intuition of which things must have intrinsic value for all men, and it is even difficult to judge whether they probably have this value for them. It is here that philosophy is most dependent on psychology, and on the knowledge which it should afford us of the diversities of human character.

Now, as we found in reflecting on the real and intrinsic value which some things seem to possess, that an essential condition of this value was their power to produce an emotional effect in some mind or minds, so now we have found what kind of effect this must be from considering the judgments that attribute this value to the things and the emotions that are conditions of these judgments. The intrinsic value that belongs to certain external things as possible objects of perception is conditioned by their power to evoke joy, admiration, wonder, satisfaction, gratitude, sorrow or pity in the mind or minds referred to, or as we may otherwise express it, in their capacity for becoming *stimuli* of one or other of these emotions. Now we do not say that the *stimuli* of fear or anger cease to be real *stimuli* of the emotion in question because on some particular occasion they fail to evoke it in a given individual, or even if they fail to evoke it in him frequently. Their reality we think is unaffected, and we explain their failure by some counteracting cause or defect in the individual. So is it with the real value of things. Their power to become *stimuli* of

certain emotions, and the judgments of value involved in these emotions, is met and counteracted by all sorts of circumstance, of which the most important is that men do not present a free and open mind to the new influence. They are preoccupied by their prevailing sentiments and desires, and cannot give sustained attention to the new object; and without such attention they cannot feel the joy, admiration, wonder or gratitude which they would otherwise feel. It is the same with the things that have the highest value for us, only it is here the common and lower part of our nature, and the vices to which we have become subject, that distract our attention. And besides these obstructions, there are peculiar defects in the nature of each man rendering him less responsive to the stimuli of some particular emotion than to others, or less susceptible to them when they are connected with some particular thing. Thus the old tell the young that they will realise the value of certain things which they now despise when they have had a fuller experience of life. Parents reproach children for not valuing their homes, and religious people tell men of the world that they do not know what their true good is. The early Christian Church supposed that men had first to despise earthly things before they could value the heavenly. There was a day in St. Augustine's life in which, in company with others, there was a "transvaluation of all values" for them, when "this world with all its delights became contemptible to us."* Such cases not only show the difficulties of distinguishing between fictitious and real value, but that things may have a real value for us which we are at present indifferent to or despise.

That certain things have a real and intrinsic value for us does not therefore mean that as a point of fact they always evoke, in response to their stimulus, a certain kind of emotion, but that they have the power to evoke it when we present a free and open mind to their influence; and the complete

* *The Confessions.*

cause of the emotion does not only lie in the thing that has value, but this in conjunction with the conditions that we supply from the resources of our own nature.

In passing from attributing value to some external thing for oneself to attributing it also for others, we must infer that this rule holds good for them also. For instance, if I find that the beauty of nature has intrinsic value for myself, in affirming it to have a similar value for others, I affirm that it has a relatively permanent power to arouse in them joy, admiration or wonder, when their minds are open to its influence. We may therefore formulate the following laws of value: (4) *A thing cannot have intrinsic value for every one of a certain group or class of minds unless every member of this group is capable of responding in the appropriate way to the influence of this thing upon him.* (5) *If there be anything in nature which has intrinsic value for every human being, whether he feels and knows it such or not, then the capacity to respond to its influence must be part of his specific nature as a human being.* Finally (6) *If there be anything in nature devoid of all power to arouse joy, admiration, wonder, satisfaction, gratitude, or pity in the presence of it, in any mind whatever, then such thing is devoid of all intrinsic value.* Thus, with regard to this last rule, most people would agree that pain has no value in itself, though it may have many uses as a purge or tonic of the mind, and even possess extrinsic value for everyone. If this is the case, pain is without any power of arousing joy, admiration, wonder, gratitude or satisfaction in the presence of it; but we may sometimes feel gratitude for some of its consequences and awe and curiosity in contemplation of it as one of the awful powers suspended over us.

With regard to the second rule, that whatever has intrinsic value for one mind has intrinsic value for all minds of the same species, so far as it is part of their specific nature to respond in a similar way to its influence, we may ask whether this rule has application to the intrinsic valuation of

knowledge. For most men value knowledge only as a means to other ends, and only those kinds of knowledge that are of advantage to them in their occupations and professions. On the other hand, there are a few scientific men and philosophers who have a genuine enthusiasm for knowledge. We might then infer that knowledge has intrinsic value only for such men, on the ground that they alone feel joy, admiration or wonder for knowledge itself independently of its consequences. But this conclusion would be false from the point of view of the present rule if it could be proved that a capacity to feel joy, admiration or wonder for knowledge itself were part of the specific nature of all human beings, however difficult to elicit, and in that case knowledge would have an intrinsic value for all men.

We have, then, tried to justify the common belief that things have a real value independently of the fluctuation of our conceptions and emotions about them, that some external things, though it is difficult to say which, may have intrinsic value for everyone, others for some class or group of minds, others perhaps for only one person in the world. In all such cases the point to be considered is whether the power which the thing has is adapted to our common human nature, or adapted only to the peculiar nature of some group or class of minds, or to what is distinctive of a single individual. For everywhere the fitness of a thing to act as a stimulus of certain emotions, which is essential to its possessing intrinsic value, implies a fitness in the minds for whom it has this value to respond in the appropriate way to it.

II. *Of the Intrinsic Value of the Constituents and Qualities of the Mind.*

We have hitherto chiefly treated of the value of external things as possible objects of perception, for it is these that we first value; we have now to inquire into the value attributed to the constituents and qualities of the mind. The value of

each seems to be complementary to that of the other. For, however much we have sought to deal exclusively with external things, yet in the very conception we have formed of their value this was seen to be conditioned by the existence of the mind or minds to which they were related, and by their power to elicit a certain kind of emotion in it or them. In what sense, then, can external things be held to have "intrinsic" value if their value is not wholly contained within themselves? There must be some sense in which we do so value them; for we say of someone we love that we value him for himself alone. We mean that we do not value him for his use to us in subserving our interests; to value him in this way is to regard him as we regard a good servant, agent or employee, and this is a matter of interest, not of love. Whenever we love anyone it is implied that we value him for himself, however much the other kind of value is mixed with it. But in valuing him for himself or intrinsically we do not mean to exclude the effect which he has produced on us, for it is precisely this effect that makes us attribute this value to him. For although he might have many virtues and excellent qualities of character, which would make him a useful, and therefore valuable member of society, yet unless these moved us to joy, admiration, wonder, gratitude, or above all these, to love, we should not value him for himself. And we know by experience how often a single charm of nature surpasses all the virtues in moving us to love.

The intrinsic value of an external thing does not therefore mean that its value is wholly self-contained. Not only does its value depend on its power to produce an emotional effect on us, but this effect must be of a certain kind. If an external thing has only power to arouse fear, anger, disgust, or repugnance, it can have no intrinsic value at all. Yet it may, nevertheless, possess extrinsic value, for seeing that so many dangerous things exist in nature, it is of the utmost importance that they should become stimuli of one or other of these

emotions, so that we may be warned in time to avoid or to destroy them. Now with regard to these emotions, no one would say that fear, anger, disgust, and repugnance were valued for themselves. Like the external things that arouse them they are valued only for their uses or functions. But every one perhaps would say that joy, admiration, wonder, satisfaction, and gratitude were valued for themselves. And we have seen that the things that are causes of these emotions, and in turn become their objects, have also such intrinsic value. Therefore, we reach this conclusion that both the things which arouse fear, anger, disgust, and repugnance, as well as these emotions themselves, possess only extrinsic value, but that both the things which arouse joy, admiration, wonder, satisfaction, and gratitude, and these emotions themselves, in addition to their extrinsic value, possess intrinsic value. Let us then formulate tentatively this law: (7) *Whenever an external thing possesses intrinsic value as a possible object of perception, the emotion which it has power to evoke in the mind possesses also intrinsic value.*

Now, if it be true that everyone would judge that joy, admiration, wonder, satisfaction, and gratitude possessed intrinsic value, and would consistently maintain this opinion, then we may infer that these emotions possess intrinsic value for everyone. If we next compare this conclusion with one already reached, that anything that has power to evoke one or other of these emotions possesses also intrinsic value, may we not infer that both these emotions and the things which excite them, possess this value for everyone? But such an inference would overlook the fact that the thing which arouses joy, admiration, or wonder in one man often fails to arouse it in another. Thus it is that men devote themselves to different branches of science or art, and often show that they are indifferent to others. Therefore, as we have already seen, we must confine ourselves to the judgment, that for ourselves, and those who are like us in this respect, certain of these things possess intrinsic value.

Now we have got two groups of emotions. The first consists of joy, admiration, wonder, satisfaction, and gratitude, with perhaps others; and this group possesses intrinsic value. The second consists of fear, anger, disgust, repugnance, and others; and this group is without intrinsic value. What is the difference between the one group and the other which accounts for the one possessing and the other lacking such an important characteristic?

Just as every primary emotion has some behaviour characteristic of it, so we may sometimes find that a group of emotions, at least approximating to a class, has also a kind of behaviour characteristic of it. The manner of a man who is friendly to us is naturally different from that of one who is hostile. Suspicion, repugnance, fear, and anger are the emotions apt to be evoked at the sight of an enemy; trust, sympathetic, and kindly emotions at the sight of one to whom our attitude is friendly. While the friendly attitude does not involve friendship, it underlies and is included in the latter sentiment. We like to be with those with whom we are friendly; we usually avoid those to whom we are hostile. This behaviour becomes still more marked where the hostile attitude is hatred and the friendly attitude, love. So is it with the group of emotions that precede and condition the judgments that attribute intrinsic value to things. If things have no importance for us, after the first glance, we cease to attend to them; for there is no emotion to sustain the attention. If they have importance, but no intrinsic value, we may continue to attend to them under the influence of fear, anger, disgust, repugnance or curiosity. But where we feel they have value for themselves we not only continue to attend to them, but like to remain in their neighbourhood, and seek to control them so far as to be able to see them and have dealings with them. Thus is it with the animals, who have probably no conceptions of value; they manifest to us the value they attach to certain things by exerting control over them so as to keep them in their

neighbourhood, as is shown in their dealings with their offspring and their supplies of food, and by observing and being able to recognise and return to their lairs, nests, or other places of security. This behaviour toward things that have intrinsic value for us is common to the pleasant emotions of joy, admiration, wonder, satisfaction, gratitude, and to the painful emotions of pity and sorrow at their loss. It is also included in the behaviour of the great sentiment of love. Here is a kind of behaviour which all these emotions and this sentiment share in common.

These emotions also share in a common tendency to protect their objects, which is manifested in the behaviour of all of them when anything threatens the existence or value of their objects. For instance, the joy in nature and the admiration for its beauty do not merely attract us to certain places, but when any of the hideous forms of modern industry threaten to encroach upon them, the behaviour of these emotions manifests a tendency to protect them against the encroachment. And pity likewise not only moves us to restore the person pitied to his former state, but is ready to protect him against further injury; and gratitude, not only to reward our benefactor, but to protect him against his enemies.

We can now give a fuller definition of the intrinsic value of external things. Those external things have intrinsic value that have power to evoke in any mind adapted to them one or other of a certain group of emotions having a common type of behaviour; and this behaviour is directed to keep these things in relation to such mind so that it can perceive them, deal with them and protect them.

The intrinsic value of external things must not be wholly identified with the power they possess to produce the effects to which we have referred. For why should some things have no power to evoke in us either joy, admiration, wonder, pity or gratitude, but only fear, anger, disgust or repugnance, if it is not that they possess qualities that are bad or have negative

value; whereas those which evoke one of the former emotions have qualities that are intrinsically good, and are therefore fitted to become stimuli of these emotions. Therefore, there must be qualities of intrinsic value in certain things, as, for instance, the beauty of nature and works of art and the charm of some person's manner, conversation, and personality,—which give these things power to evoke the right emotions in us, and the behaviour which shows that we so value them. The power to evoke the appropriate emotions and behaviour is, therefore, no more than a part or essential condition of the intrinsic value of such things, but does not sum up their value.

Still the intrinsic value attributed to some external things depends on their power to evoke emotions that also have intrinsic value. This distinguishes them from the things we avoid which evoke emotions that have only extrinsic value. Are we not then driven to conclude that the former things really possess no more than extrinsic value, and that the emotions they evoke in us alone have intrinsic value?

Now, it is a law of the emotions that valuation follows always the line of attention, and as this, in mental development, is first directed to outward things, so value is first attributed to outward things, and we cannot attribute it simultaneously to the source of attention in the mind, which is the present emotion or impulse. If now an external thing has beauty or charm, and the emotion of joy or admiration has been aroused by it, so that the thing becomes the object of this emotion, then all the spontaneous exclamations elicited as "how beautiful," "how glorious," "how splendid," which express judgments of value, are directed to the external thing, not to the emotion. Instead of the thing being only valued as a means to the emotion, it is the emotion that teaches us the intrinsic value of the thing. Just then as the external thing must have power to affect us in this way, so the emotion it evokes must have power to make us realise the intrinsic value of the beautiful thing, and one no more than the other loses on this account its intrinsic value.

If valuation follows the line of attention, it must be some time after we have first valued external things that we come to value the emotions and sentiments to which they give rise, and we find, as a matter of fact, that this valuation arises much later in mental development than the former, being dependent on powers of reflection which the young child does not possess.

Now let us assume that we have reflected on the emotions and judged that certain of them have value in themselves, can we conclude that this intrinsic value, any more than in the case of external things is self-contained? The nature of an emotion is to overflow on to its object; its structure is built up in reference to an object; it impresses on us the importance of its object; its tendencies converge on its object, and find in this object the satisfaction of their ends. How can its value be contained in itself? Yet we do value certain emotions for themselves, just as we value external things for themselves. We come to value in this way joy, admiration, wonder, and gratitude, and perhaps pity, and in a higher degree the sentiment of love developed from one or other of them. And just as we found that these emotions have a common behaviour, as well as a behaviour distinctive of each, so we shall find that there is something analogous to this common behaviour in the attitude we adopt to them. For as our behaviour in regard to external things that we value is shown by our endeavour to keep such things near us, present to us, or within our control, so with regard to joy, admiration, wonder, gratitude, and even pity and a certain kind of sorrow, we want to detain these emotions in consciousness, to have them more frequently there, and to obtain some control over their manifestation. Whereas all those emotions that we value only for their uses and functions, as fear, anger, disgust, and repugnance, as well as the sentiment of hatred developed from them, we do not want to detain a moment longer than is necessary to the discharge of their functions, and wish to have as seldom as possible in consciousness. Hence from this difference alone it would seem

that we might legitimately infer that the former emotions possess intrinsic value. For otherwise, why should not fear, anger, and disgust possess intrinsic value which also have their uses? Yet how closely combined and usually confused in our thought, as in most other cases, are the two kinds of value that belong to them. What an uplifting power to free us for a time from our anxieties and unsatisfied desires have the emotions of joy, admiration, and wonder! From wonder sprang philosophy and the sciences! Admiration shuts out envy. Joy gives us a sense of expansion and refreshment. Pity and gratitude sweeten us. All these emotions in their normal activities free us from pre-occupation with self. These are some of their effects; but how much of their value is intrinsic? The whole emotion has intrinsic value and the power which it has in relation to its object. This is its essential nature that its intrinsic value is dynamical, not statical. Therefore its value cannot be wholly self-contained. It ever points beyond itself to something to which its inherent impulses may be directed.

The same is true of the sentiments. The value of love cannot be separated from its object. This object may be present or past or vaguely anticipated in the future. It may be perceived or merely thought about. It may be lost or not yet found; but there is always a reference to it. Its structure is void and meaningless without an object.

As love is more complex than any emotion however complex, so it has an end more complex. Unlike emotions that have only one end, love has a plurality of ends. The first of these ends is union with the loved object. The second is the protection and preservation of this object, and especially the quality or qualities to which value belongs. The third is the enhancement of its value. Thus we seek to increase knowledge and power, and accumulate wealth, and wish our friends better and happier. And as we can never separate self from any object we love, or entirely forget its interests, so in everything we love we hope to be happy through the love of it. Love

pursues all these ends in its own way, so as, as far as possible, to realise them in harmony with one another; and where it is forced to sacrifice one for another, it is never satisfied or happy. If we will still account it to have one end, this can only lie in the harmonious activity of all its principal tendencies and the progressive fulfilment of their ends.

The value of Love then seems to lie in the relation to its object, and in the pursuit of the end or ends that centre about this object. This value is not a statical fact, but essentially dynamical. Love cannot wholly contain it within itself. But, no more than in the case of an external thing, is this inconsistent with love possessing intrinsic value.

The same conception applies here as with regard to the intrinsic value of external things. We found that the power to produce a certain emotional effect was an essential condition of their possessing intrinsic value; but that it must not be identified with this value. So is it with the sentiment of love. An essential condition of its intrinsic value is the power of love to pursue its ends; but this does not sum up its value. Because it is love it is able to pursue these ends. For hatred also has power to pursue its ends; but hatred has no intrinsic value; and the ends of hatred are opposed to those of love. For as love has intrinsic value, so the ends it pursues in relation to the loved thing have also intrinsic value. Thus the first end of love—union with the loved thing—has not only extrinsic value,—as where it serves friends to advance each other's interests,—but has a value for itself to the one who loves and to the one who is loved, so far as he reciprocates the love. The second end of love, which is the protection and preservation of the loved thing, has also intrinsic value. For as the thing which arouses love is thereby shown to have a value for itself, so its preservation must have the same kind of value. The third end of love is the enhancement of the value of the loved thing, and if this value is intrinsic, so its enhancement is also intrinsic. Thus where we make a work of art more perfect

we increase its intrinsic value. In the love of knowledge we not only strive to increase the amount of knowledge, but to make it more accurate and free from errors, and in both ways we increase its intrinsic value. In the love of persons, and where two persons gain in value through their love for one another, this may turn on a growth of self-control, as shown by such qualities as sweetness, patience, and tolerance.

Now supposing, what indeed is not the case, that the good qualities of character have only extrinsic value, still the increase of even this value may increase the intrinsic value belonging to the person in question. For where two people no longer suffer in the same degree from each other's defects, the intrinsic value which each has for the other will be increased through mutual satisfaction and the diminution of angry disagreements. We see so often, when a man takes a house for its conveniences of arrangement, neighbourhood, and protection, so that its value is due mainly to its being a means to other things, that frequently these advantages, and the absence of inconveniences he has suffered elsewhere, develop in him the love of his new home, and with this the intrinsic valuation of it. For whatever thing evokes and sustains love for it is thereby shown to have a value for itself; and if the good qualities of character help to sustain love they possess intrinsic value. The case of money is the most familiar. We notice how from the making of money for use men come to value it for itself, and no longer spend it freely: by the hoarding of money—by the keeping it near to them and within their control—misers show that its value as a means has been merged into its value as an end. Now without asserting that whenever we value a thing as a means we shall come to value it as an end, let us at least tentatively express this law: (8) *Whenever anything has some intrinsic value the extrinsic value which it has for us tends to increase its intrinsic value.* How much is the intrinsic value of those noble friends who

have served us disinterestedly increased for us through our love and gratitude!

Thus, to come back to the point from which we started, all the ends of love have, like love itself, intrinsic value. For the last end of love, to find our own happiness in the love of that thing which has evoked and sustained the love for it, must have also intrinsic value.

It is the same with those emotions that have a value for themselves. The ends of joy, admiration, wonder, gratitude, pity and satisfaction have also intrinsic value. These emotions aim at a certain kind of union with their objects, which we have already described. Love being developed from one or other of them has also the same end, though it is commonly more comprehensive. Such union has then for joy and these other emotions a value for itself. The same is true of their endeavour to protect and preserve their objects. Let us then attempt to express our conclusion in the form of a law which holds both of the emotions and sentiments: (9) *Whenever an emotion or a sentiment possesses intrinsic value, the ends it pursues in relation to its object possess the same kind of value.*

Now if we compare this law with the one reached as to the value of external things,—that wherever an external thing has intrinsic value the emotion it has power to evoke in the mind has the same kind of value, we find that we can combine them in one law which comprehends both. This we may call, *The Law of the Propagation of Intrinsic Value*:—(10) *Anything that possesses intrinsic value must have power to produce the same kind of value in some other thing over which it has power.*

But here we must understand that this power may not always achieve this effect. For as the power of the external thing to elicit the right kind of emotions depends on the minds to which it is related having affinity with it, so the power of the emotion or sentiment to realise its ends and produce such a change in its object or the relation to it as will have intrinsic value, depends on circumstances and on the

object being a fit or suitable one. Thus the power of love to do good to the loved person depends on his fitness to respond to it. Therefore we seem justified in laying down this law: (11) *A condition of intrinsic value belonging to one thing is the existence of some other thing with which it has affinity.* But, as we have already stated that anything that has intrinsic value, as a condition of this value, has power to produce the same kind of value in some other thing, now we know that this thing is one with which the former has affinity. Thus, if the emotion is one of admiration, the object must be something that can be admired; if the emotion is joy the object must be one that we can rejoice in; if the emotion is satisfaction the object must be something that can satisfy us; if the emotion is gratitude the object must be one to whom we can be grateful.

Now wherever there seems to be affinity between ourselves and something else we are liable to fall into error both as regards the existence and the degree of the affinity; and these errors are the source of the great illusions and disappointments of life. The person whom we admire for great qualities or great actions may not possess these qualities and may not have achieved these actions, and in such a case is not a proper object of our admiration. The person to whom we are grateful may be an enemy in disguise. The person whom we love may be one who does not reciprocate this love, and is made the more callous and ungrateful by it. Therefore the object of any one of these emotions or sentiments must have affinity with it, and have power to evoke or sustain it; and there are all degrees of this affinity, from the things that for a moment can arouse joy and admiration to those that can renew the same emotions again and again; from the persons who can only evoke but not sustain love, to those who can evoke, sustain and satisfy love for them always. The higher degrees of intrinsic value must therefore depend on the degree of fitness of things to be loved and of persons to love and be loved; and if there be any one thing of greater value than everything else, it must

be something which, other things equal, is capable of arousing, sustaining, and satisfying the greatest love for it, or this greatest love itself, or rather of both in one. For as when we take the sentiment apart from its object,—as Love,—or the object apart from the sentiment,—as Beauty or Truth or the Supreme Being himself,—the intrinsic value of each, because it is dynamical, cannot be self-contained, but ever flows from one to the other, so when we regard them in their unity, their value is not only increased, but becomes a self-contained value, though none the less dynamical, and ever flowing from one to the other.

Still regarding the emotion or the sentiment, on the one side, and the things which arouse them on the other, and become their proper objects, as each possessing intrinsic value, the power of each to produce some change in the other that also has a value for itself, appears to resemble an extrinsic value, because its value lies in being a means to something else. Thus we saw, as regards the beauty of nature, that its value seemed to be a means to evoking joy or admiration, because its power to evoke such an emotion was essential to its possessing intrinsic value, so now the value of the emotion or sentiment seems to be a means to producing the change in the thing, its object, which it conceives to be its end. But in both cases this power is a part of the essential nature of each, and a condition of its intrinsic value.

Can we then distinguish between the power to produce those effects which are a part and condition of the intrinsic value belonging to certain things from the power to produce those other effects which belong to their extrinsic value? Let us take an illustration. A glass which is beautifully engraved or cut has intrinsic value as an object of beauty, but included in its intrinsic value, as an essential condition of it, is its power to arouse admiration. On account of this effect on us, we too value it for itself. It has other possible effects which belong to its extrinsic value, and demonstrate its uses in

respect of other things. It serves to hold wine or water, and is adapted to the human lips that drink from it.

The distinction is not so clear in respect of the constituents of the mind. Joy in meeting with a friend has intrinsic value as joy; but included in this value as essential to it are the tendencies of joy directed upon its object. Thus it is essential to joy, as long as it is joy, to endeavour to maintain its object in the present relation to self, not only by adaptation of the sense-organs, but sometimes by the devices and arguments by which we endeavour to detain a friend in order to prolong the enjoyment of his company. This power to influence its object in certain ways is therefore included in its intrinsic value. But there are other influences of joy that belong to its extrinsic value. Joy is good for the body and helps the vital functions. Joy is good for the mind and frees it from bitter thoughts and unsatisfied desires. Thus we may include in the intrinsic value of joy the essential tendencies directed to its object, and in the extrinsic, the other tendencies that also have value.

If joy apart from its essential tendencies would not be the emotion it is, still, it may be said that abstracting from its character as an emotion, joy is also a pleasant experience. In respect of its pleasantness has it not also intrinsic value, and is not this value wholly contained within itself? Now we have seen that everything that has power to arouse joy or love for it has a real value in itself for those persons over whom it has this power; and pleasure is loved for itself by many persons. For this reason we may infer that pleasure has a real, intrinsic value; and we may claim that it possesses this value for all men, seeing that it appeals to what is specific in human nature. If, then, the value of pleasure for itself is conditioned by its power to evoke love for it, its value is not wholly contained in or confined to itself. Still, as in other cases, this power does not sum up its value; for unless pleasure had intrinsic value it would not have this power over us.

While there are some among those of easy circumstances and self-indulgent dispositions that become lovers of pleasure through constant pursuit of it, there are many more that are ready to welcome it and detain it when it comes to them at certain times. For while the pursuit of it conflicts with business, they anticipate it in their recreations, and when they have obtained it go home satisfied. Yet there are certain pleasures, and those that produce the strongest desires for them, that often arouse dissatisfaction for them afterwards. This dissatisfaction is evidence that the particular pleasure has a negative value or badness in it, as the satisfaction with other pleasures is evidence that they have positive value or goodness, and this badness diminishes, if it does not destroy, the intrinsic value of the pleasure.

The power of pleasure over us to evoke satisfaction or some kindred emotion, or the love which is based on such emotion, is therefore an essential condition of the intrinsic value of pleasure. If pleasure only produced dissatisfaction without any opposite emotion, it would have no intrinsic value at all.

While pleasure has some value for itself, it is generally agreed that pain is intrinsically bad. Yet if physical pain did not distract our attention from other things, and absorb attention on itself, and become an object on its own account, in spite of ourselves, where would be its evil? And it does not only force our attention, but it evokes and becomes the object of one of those emotions which, both in themselves and in their behaviour demonstrate, as we have already seen, that their objects have a negative value or badness. Thus we are "repugnant" to the presence of pain; we are "angry" at the compulsion that it exercises over us; we "fear" its continuance; and at length and sometimes we break down in "sorrow" because we cannot escape from it.

The intrinsic evil of pain, then, is like the intrinsic value or goodness of other things, dynamical in its nature, and an essential condition of its badness is its power to absorb the

attention and to arouse and become the object of repugnance, anger, fear, or sorrow. Its badness, like the goodness of other things, cannot therefore be wholly contained in itself, but no more can its badness be identified with its power to arouse one or other of these emotions, for unless it had a badness in its own nature it would not have this power.

Let us now sum up our conclusions as to the nature of intrinsic value, whether in external things or in the constituents of the mind—in the emotions and sentiments and their objects. Intrinsic value is not a simple, statical quality that can be found in some things, but about which nothing further can be said. It is essentially dynamical. It presupposes always something on which it can act, with which it has affinity, and the power of acting on this thing in certain ways. Such value cannot, therefore, be wholly contained in or confined to the thing which possesses it. For a condition of intrinsic value is the power of propagating the same kind of value in the other thing with which it has affinity. But this power, though a part and condition of this value does not sum it up. For things would not have power to produce excellent effects unless there were something excellent in their own nature. Fear, anger, and hate have one kind of effect; joy, admiration, and love have an opposite kind. The power of each depends on its own nature. The power which is a condition of intrinsic value is therefore also conditioned by it.

Note.—Wherever the term "value" is used in this paper, "positive value" is to be understood, except where "negative value" is expressly referred to. The remarks on p. 218 and p. 234 concerning pain must not be taken to imply that pain may not sometimes increase the intrinsic value of an emotion in which it is an ingredient, as, for instance, in the joy of dangerous pastimes. In the difficult joys of martyrs or of heroic soldiers, pain is not the object of the joy, but the object is the fortitude or patience to bear it.

Meeting of the Aristotelian Society at 22, Albemarle Street, London, April 17th, 1919, at 8 P.M.

IX.—THE STEREOSCOPIC CHARACTER OF KNOWLEDGE.

By J. B. BAILLIE.

"To us the Universe is a living whole which, apart from violence and partial death, refuses to divide itself into well-defined objects and clean-cut distinctions."—BRADLEY.

"Yes, sir, but a man is to guard himself against taking a thing in general."—JOHNSON.

"Thought's the slave of life."—HENRY IV, Part 1.

I.

IN ordinary intercourse as also in pyschological and logical analysis, it is taken for granted that the mind in knowing an object proceeds in a linear series of stages from a point which marks the beginning to a point which marks the termination of the process. It is also taken for granted that in knowledge we somehow deal with the surface of the object, whether the surface be regarded as an outside "form," an external "quality," or an "aspect" of the object in question. Even when we are supposed to penetrate into the interior of the object, and to know its essence, the process of doing so is viewed as a linear process, that of piercing into its inner nature, and the essence obtained is considered to be an "aspect" or "inner surface."

At first sight these ways of looking at the process of knowledge would seem very different or even inconsistent. A linear direction and a superficies are not the same, and a surface is not simply a combination of lines. The connexion, however, between these familiar assumptions is not difficult to trace. A succession of linear directions will cover the surface, though it will not give a surface; and the surface, whatever more it

may be and however it may be derived, is at least partially a synthesis of lines. The two assumptions therefore work conveniently together and co-operate sufficiently to keep up the specious accuracy of the assumptions themselves.

If they were merely metaphors, perhaps little harm could arise from accepting them, though metaphors tend all too readily to be accepted as facts when they are constantly employed without criticism. We find, however, they are more than metaphors.

Knowledge is supposed literally to consist in a succession of stages, in the last of which we have the "truth," the preceding stages being then set aside or superseded. This is seen when a judgment is regarded as an act of knowledge detachable from the mental complex of memory and imagination which preceded it, and without which it could not take place, but which none the less are supposed in no way to enter into the truth of the judgment. Judgment is the climax of the process, and, being the last stage in the attainment of the end in view, is separated off from what preceded it and alone contains the truth of knowledge merely because it is the last stage in the process. Similarly an inference or a system of judgments is only realised after a process of thought, and when attained is held to be a self-contained body of truth as it stands, apart from the process by which it was reached: the preceding process is a mere succession of "events" in the individual's mind. In a word, when the process of knowledge is regarded as a linear series, the truth comes to be identified with the fina stage in the series. The end of knowledge is identified with the termination of the process. The form of sequence in which knowledge appears determines the very conception of truth itself. Temporal succession is represented as a line, and the linear flow of time shapes our view of the nature of knowledge, and of the relation of knowledge to reality.

Against this conception it seems important to urge that the influence of the temporal form of the process of knowledge is

misleading, and when over-emphasised it is altogether mistaken. It would be easy to show in detail that it does not do justice to the facts of knowledge, and is inconsistent with its issue. Whatever meaning there may be in the statement that the truth must be the whole, at least it lays stress on what is vital in the operation of knowledge from first to last—the indivisible integrity of the individual mind. This must be our starting point in the interpretation of the nature of human knowledge. Within the confines of this form of individuality all processes of mental experience whatever, and the knowing process in particular, take place. From this concrete reality they emanate; its unity holds together, and is manifested in the various functions which constitute the several processes of experience. All temporal sequence takes place within some wider reality, is relative to that reality, and is not by itself ultimate. The flow of time is but the form of succession of events. The ultimate fact is not a mere succession, but a principle expressed in and through succession. The sequence is, in short, the appearance of the reality. It is the real, undivided and individual, which is both the point of departure and the final result expressed by the process. To take the process by itself is to misstate the situation. All this holds true of mental events as of all other events, whether they take place as a succession of changes in an organism or in a planetary system.

We must then start with the integral reality of the individual mind if we would understand knowledge—the special process by which the mind becomes aware of the meaning of the world of objects and in so doing establishes unity with its world.

Knowledge is, in the first instance, a specific expression of the vital energy of the individual. It subsumes within itself all the energies, organic, chemical and physical, which together compose the constitution of a human being. The individual is an organism sustaining its organic life with other organisms, interrelated with them through functions and

processes which never enter into clear consciousness at all; which are as yet only obscurely known, but which none the less effectively determines its existence. It is under the control of chemical agencies and physical forces in ways even more obscure but quite unmistakable. As a physical body the individual is as much under the sway of gravitation as any particle of inanimate matter. It is on the basis of these non-conscious conditions that the operations of knowledge take place. Knowledge is a specific conscious concentration of the whole complex of energies—physical, chemical, organic—making up the concrete human individual. When knowing, the mind does not merely utilise these energies to carry out its purpose, it contains them in its operation, gathers them into itself, and gives them a specific direction in the conscious interests of individuality. It is because mind involves in its energy the other modes of energy constituting the real, that mind can be regarded as at once the outcome and the fulfilment of the real. It is the apex of the pyramid, the nucleus of the entire complex system. Mind is continuous with and inseparable from nature, if we understand by nature the totality of organic and inorganic processes. For this reason it is alone in a position to give the "truth" about the world, for it sums up and brings to a conscious focus the various orders of facts which constitute the non-mental world.

Mind being so constituted, the operation of knowledge is in essence one way by which it seeks at once to articulate its continuity with its world, to realise in conscious form the energies it concentrates within itself, to establish its place as the final energy of the world, and to secure the independent integrity of the individual mind. These are but several phases of one and the same operation, and all involve one another. In carrying out this process its life and activity are one and single throughout; it operates as a solid global whole. It brings all its resources to bear on the attainment of its end, for its end is in the long run the realisation of itself as a single individual. Some

factors in the process are more relevant to the issue than others: and we may for purposes of abstract analysis treat the less relevant as irrelevant. But, in fact and in principle, the relevance is a matter of degree. Memory, sensation, imagination, and emotion are all implicated in the operations of judgment and inference, and are inseparable from their successful exercise. They are less relevant than conception, and more relevant than habits of will, or again than the circulation of the blood in the brain. But the difference is one of degree of remoteness from the final outcome of the process of knowledge: that is all. The whole complex of the energies of the individual is concentrated into the operation of knowledge, for that operation consists simply in the fulfilment of the life of mind in one of its various forms of expression.

II.

The effort of knowing is, then, a centrally initiated and centrally controlled vital activity. The actual starting point of the process of knowledge is a state of "desire,"* a condition of mental tension with an implicit end shaping its direction. How this is instigated it seems impossible to say definitely. We may imagine the psychic energy of a mind in continuity with a kind of larger whole of psychic energy, and we may suppose that it is the want of equilibrium between the mental energy of an individual and this greater realm which creates the state of emotional tension†. Or we might imagine that the state is due to an effort of mentality to bring to a single conscious focus and give specific direction to the lower unco-ordinated energies of psychic life, just as the energy of life may consist in concentrating into a single channel of activity the unco-ordinated energies of

* Aristotle, *Metaphysics I.*

† It is this view that leads to the suggestion that through knowledge man communicates with the Divine Spirit.

inorganic nature—chemical and physical.* Or, again, we can suppose that the activity of knowledge is due to the overplus of the energy of the mind in contrast to that of the objects about it—organic, physical, chemical—thus creating a sense of disjunction and separation within the real, which the mind seeks to remove by utilising its superior energy to establish harmony between the mind and the world of objects.† Or, finally, it may be that the singleness of the mind has to be maintained by active effort in the face of the varied world of objects, so as to recover or retain its place as one reality amongst other real beings; and one of its ways of doing so is to realise itself by articulating the meaning of other things.‡ All of these guesses are but hints at what must perhaps always remain one of the great mysteries of experience.

Whatever suggestion we make to account for the original constitution of this fundamental desire towards the self-fulfilment of individuality in which knowledge begins and in which it essentially consists, the main point is that it is with the indivisible integrity of the mind that the effort is made and carried on. The individual mind is stimulated into the activity of knowledge as a plant or an animal is stimulated into exercising the energies of life which lead to growth and development, which are the essential conditions of the maintenance of life. The realm of independent individual objects urges the mind, in ways unconscious as well as subconscious, to realise its own vitality to the utmost, and exert all its resources to secure itself as an independent self-directing individuality. Its obscure and inchoate unity is

* This would account for the conception that knowledge is a creative synthesis.

† Hence the familiar attitude which regards knowledge as a kind of necessary epiphenomenon, an over-consciousness of the "real" world, reproducing or "copying" the actual realm of things,—an elaborate work of supererogation.

‡ This is the source of the so-called pragmatist interpretation of knowledge.

drawn out into ever completer manifestation by the appeal of the manifold and relatively complete independent individuals* whose ensemble constitutes its environing world. And in being so drawn out of its implicit unity the mind is assured all the while that it is proceeding towards its own fuller self-realisation. It is not, however, simply to imitate or reproduce in its own case the independence of other real beings that it undertakes the process. No doubt practical activity is satisfied by securing a relation of working independence, which puts the individual at least on a level with other beings. But this process has in many cases a much more restricted interest for the individual mind than that of knowledge: it is limited by the kind of beings with which the individual enters into practical relation; some of these are so much lower in the scale of individuality than the mind that the maintenance of individuality at their level alone would, and in fact does, degrade the human mind.† Knowledge, however, aims at securing for the individual mind an independence adequate to its own level of individuality. The individuality of objects may be perfect in their order of being, without being equal to that of the individual mind. To obtain for itself complete individuality of its own order of being is the aim of the activity of mind in knowing. Hence it is that the mind, while stimulated into activity by objects, never takes their standard of reality as its own standard of truth. It always acts as if it were above them, superior to them, reduces them even to mere instances of more general and comprehensive forms of individuality. The limit of its process

* "Relatively complete" because knowledge finds or takes for granted that the real object is completely individual before the process of knowledge is undertaken. It is significant that we never undertake the knowledge of anything which is either chaotic, formless, or in the flux of mere change. We either assume the object is completely real before we begin or we wait till its reality is completed before we try to know it.

† *Cp.* the lowering mental effect of many forms of occupation.

is not set by other objects but by itself alone. In knowing, the mind, to use a familiar though doubtful expression, "transcends" its object; *i.e.*, has an individuality to maintain which is higher in order of being than that of the object. In a sense its cognitive relation to the object is but a stepping stone to the attainment of its high level of realisation, and partly because of this the object is invariably treated as inferior in quality of being to the mind which knows it.* In knowledge the object is a means not the end of the process; and so far from being an end in itself, it is, to use the current phrase, but material for knowledge to deal with. The subject-object relation as it subsists in knowledge is not one of equality of nature, order of being, or value between the factors constituting the situation. Hence it is that when the being with which the individual stands in relation is of equal or higher order with that of the individual mind, the attitude of knowledge is either not adopted at all or is only partially adequate to the situation in which the individualities stand to one another. This is seen in a peculiarly interesting way in the attitude of human individuals to one another in a society and in the attitude of the human individual to a Divine Being. In both cases it is felt that to speak of another human being or of the Divine Being as a mere "object" is either a figure of speech or a degradation. And the issue of knowledge which attempts to treat them as mere objects seems to justify this feeling. On the one hand, we have the statistical view of human life, which by reducing human individuals to instances of general laws—*i.e.*, larger individual wholes—lowers the sense of the value of the single individual; on the other, the naturalistic interpretation of human beings, which leaves

* This is one of the most interesting peculiarities of the attitude of knowledge, and distinguishes knowledge in a characteristic way from practice. It gives knowledge the quality of detachment and freedom found to some extent in the mood of play. In practice the individual wrestles with his object as with an equal.

nothing but a difference of complexity to distinguish human life from that of sub-human animals and even inanimate things. The opposition felt to both of these is in the long run not strictly logical, but due to a revolt of the concrete individual mind against the attitude towards human beings implied in the attempt to exhaust human nature by purely cognitive processes, *i.e.*, to regard human individuals as mere objects to be known. An appeal is made to the "heart" or to practical life to defend the individual against such seeming degradation; or it is insisted that knowledge is "unequal" to the task of knowing the human individual at all, because this would require that the agent knowing should in some way know himself and know his own knowledge as well. Indirectly the same objection is confirmed when for the comprehension of the human individual it is urged that we must adopt the attitude of "Love" as well as "knowledge," and regard him as an end in himself, but not as a mere object but as a subject. The subject being itself a cognitive agent, cannot be treated as a mere object, even when the subject is another person. And in social life it is found that we do not merely "know" other human beings, we feel with them, are interested in them, in a word unite ourselves with them in ways different from and more than that of mere knowledge.* Similarly the attempt to treat the Divine Being as a *mere* object of knowledge has always been felt to be shadowed by defeat from the very first. This is not simply because the object is so vast relatively to the puny individual agent who undertakes the task. Size is irrelevant; and the human mind can grasp by knowledge objects immensely greater in extent than the finite individual, more durable in time and more comprehensive as individualities. It is rather that the

* Hence it is that in historical theories of knowledge the discussion, as a rule, centres round the cognitive relation of the mind to objects of "nature"; the discussion of man's relation to man is relegated to another inquiry. No analysis is given of how man "knows" man, except in so far as man has a physical or organic embodiment.

individuality of the Divine Being is in quality and order of existence admittedly higher than the human individual, and the fulfilment of human individuality through the process of knowledge does not require to be established in the face of such a Being. The attempt is unnecessary, and is futile from the start—knowledge is but one channel through which the concrete individuality of man is realised and fulfilled. An absolute individuality, which in some way contains, and is in every sense superior to, that of man, must, in order to enter into any relation with man at all, call forth all the sources of man's being simultaneously, and in undivided unity. Man's relation to God must be established in terms of feeling, will, and knowledge, in terms of beauty, love, and truth together, through all the channels of his mental life is short, and not by any one of them alone. Hence it is that men approach God through feeling, through practical action, and through cognitive processes, alternately or by arbitrarily selecting one as their primary channel; and never suppose that one by itself is enough for the fulfilment they seek through conscious communion with such a Being. Hence, too, the current use of "faith" either in addition to, or in distinction from, knowledge, as the principle of union with the Divine Being. And hence indirectly the failure of all attempts to interpret God's Being in terms of knowledge. When the attempt is made, and God is treated as a mere object of knowledge, it is invariably found that the object is an unknown, an unknowable, an unfathomable, an abstract "entity of reason," *i.e.*, a God away from man altogether and without the complex richness characteristic of a concrete object of knowledge. God is *made* into an object at the price of losing the essential significance appropriate to a superior order of Being, and the issue of such knowledge is thus in plain discordance with the initial character of the Being which the thinker sets out to know. To be treated as an object is to be lowered beneath the level of the cognitive subject; and when the object in question admittedly transcends all

other objects of knowledge it becomes a bare substratum of objects in general, less in actual content than a finite individual object. Hence the paradoxical result, the transformation of the Supreme Being into a mere object of knowledge turns this object into a lower order of being than that of any finite object whatever. It becomes a bare object, indistinguishable from nothing, a mere abstract limit to knowledge itself, because it has the lowest limit of meaning of any object—mere Being. The attribute "supreme" remains, but only as an empty compliment passed by the knowing subject on the object in deference to the inquiry undertaken; the attribute is not justified by the results attained. In point of fact such a Being at the end of the process of knowledge tends to be supreme only in its insignificance.

III.

The undertaking of knowledge, then, engages the energies of the individual mind in the interests of self-fulfilment in the face of the equally independent objects with which it is environed. It is limited from first to last by this consideration: the mind has to realise its own special order of individuality, which is felt to be higher than that of the objects with which it deals. It always feels itself equal to its task precisely in consequence of this initial superiority which it possesses; and the result justifies its claim. The objects it knows are interpreted in terms which partially express its own constitution. The individual mind is in part a complex of physical, chemical, and organic factors, and these it shares with other beings. It is with objects of such a character that its knowledge is in the first instance concerned, and with these its efforts are in the main successful. As a mind, conscious of itself as mind, it is above their order of being; as an individual mind it consciously concentrates all their energies into a single individuality.

In realising its individuality through this process, it proceeds in a succession of stages, in each of which its individual life is expressed, and none of which can be dispensed with in its effort after complete satisfaction. The emotional attitude, which is the starting point of every process of knowledge, is the intermediary between the organic embodiment of the individual mind and the higher conscious life. The organism gathers into itself the inanimate energies of the individual, and carries with it all their reality. In an emotion the organic is transformed and concentrated into a conscious direction of the mind towards a fulfilment of individuality. Hence it is that in taking up the attitude of knowledge the mind always feels itself rooted in reality from the first, and is never away from the real, never carries on a process which is over and above the real world or independent of it. Knowing is an actual function of the real which is carried through by that form of individuality in which all the other energies of the actual world are summed up and unified. It is thus that in knowledge the mind is in communion with and communicates reality; it communes with the real because it is through and through continuous with the substance of the world; it communicates the real also because it expresses in one form the active energy of the individual mind, which is an epitome of all reality. It is not because the mind and the world are opposed that knowledge takes place or is demanded;* it is because they are in continuity that knowledge is even possible. We may, indeed, draw a distinction between the mind and the rest of the real, or even between the mind and the body. And it is certainly true to say that knowledge is a mental process alone. But it is not *in virtue of* this distinction that knowledge takes place, but in spite of the distinction. The indivisible continuity of mind with the world about it is the very inspiration of knowledge and the guarantee of the success of the effort. Hence it

* This view is entirely based on the perceptual view of the situation.

is meaningless to speak of the mind "copying" the nature of things through the process of knowledge, or "reproducing" the order of the world in intelligible terms. This precisely inverts the actual situation; for it implies that the mind brings nothing new into the real, that the real is complete by itself without mind, and that mind can at best but duplicate in shadowy form a finished substantial reality. The real is not even known to be complete until mind gathers up all its substance into itself. It is impossible to "copy" until we know the original, and this means that the knowledge of the original cannot itself be a copy. It is equally impossible to 'copy" until the original is fully present before us; but if the mind is required to complete the real, the original is not in existence till the mind is there—or otherwise the so-called 'copy" is itself a constituent factor in the original. Nor can we "copy" unless the transcriber is outside both the real and the material to which he transfers the original form; the artist cannot himself be the copy and the transcriber in one. Nor again does the mind give us a "reproduction," in any other sense, of the real; for the real must be ripe before it can be reproduced, and it is not ripe till mind has supervened upon and consciously focussed the non-mental levels of reality. And any "reproduction" must give us the real over again in a like independent substantial form; but transparently knowledge neither creates nor procreates a real independent of its own being. What knowledge reproduces is a mental product pure and simple, which may be incorporated in physical symbol, such as words or letters, but these are merely artificial aids to knowledge, not real beings by themselves. This mental result can certainly be reproduced time after time, by the same mind or in different minds; but every time it is a mode of mental life, not an individual existence independent of mind. And in general it seems absurd that reality should ever require to be "copied" or "reproduced" in any sense. The original is enough to constitute a part of the world; nothing

less will suffice to constitute a part, and the original is good enough for all purposes, we may be certain. A copy is a poor substitute for an original, and a needless addition to it. Of all individuality it may be said that once is enough. What the mind strives for in knowledge, what reality achieves by the process of knowledge, is fulfilment of being in conscious articulate form, a fulfilment which is an expression of the life of mind, a realisation of this highest order of individuality. Mind has laws and conditions peculiar to itself, and by these it carries on and carries out its own peculiar life. In realising itself through the process of knowledge it operates according to these laws and conditions and no other, and does so for its own sake and for nothing else. Physical beings as such, and organic beings as such, fulfil their order of individuality by laws and conditions peculiar to themselves. The activity of mind subsumes these other orders of reality; they make possible the activity of the concrete individual as a conscious concentration of their energies. In fulfilling itself, the individual mind fulfils all that they contain and are; and over and above fulfils its own level of energy as well. In that sense mental activity in general, and the activity of knowing in particular, is the fulfilment of the world in which we are placed, is in a sense its final outcome, and thus its supreme end.

IV.

In the execution of this undertaking, the concrete individual proceeds gradually. It meets other beings at their own plane as a first stage. Its effort is directed first towards establishing itself in relation to them in terms of their specialised embodiment. It becomes conscious of them on the outside and by way of spatially constituted physiological functions—the sense organs of the organised embodiment of the individual mind. They do not act of themselves, the mind operates through and in them as a concrete individual in the interest of its self-

fulfilment; all its potencies—memory, feeling, imagination and emotion—are to some extent involved in the operation. Moreover, because the operation is a reaction of the individual on an independent individual object. The mind is conscious of the solid reality of the object from the first, though to begin this is only felt as a restraining limit to its own expansion and an incitement to its fulfilment, at once drawing the mind beyond its immediate state and compelling it to sustain itself in relation to the object independent of itself.

This mental operation through sense functions—sense-perception—is found, simply by the process of the experience of knowledge, to meet only the first demands of the mind and the outside or superficial character of the object; and these two go together. The mind certainly satisfies itself to a certain extent in the process; it arranges sense-qualities in an order of place and succession. It thus realises the meaning of the object, and in so doing realises its mental life at the same time. It maintains and secures more firmly its individuality as a real among reals. But the outcome of the process at this stage is merely to throw into still stronger relief the independence of the objects. Knowledge does not merely substantiate the individual mind, it substantiates the objects at the same time. They become more real for the mind the more the mind knows about them. The constituent factors of the objects become distinguished, and so related, in a way that is not found at the earliest stage of emotional interest in the object. Their parts are differentiated from one another; the reality of the object becomes a whole of such parts: the objects themselves as separate beings are found to have points of contact and connexion with each other, to share similar elements. This discovery of fuller knowledge, obtained on the completion of the first stage—the use of sense-organs—draws the mind on to a further reaction, to a further establishment of its being in relation to other beings, to a further fulfilment of itself as an individual. Just as practical action commits the individual

to a more prolonged activity as soon as the first active step is taken, and in a manner creates the necessity to take further action simply because he has made the first venture; so in the case of knowledge. Knowledge both allays activity and awakens new activity, finds solutions and sets problems, gives answers and raises questions. In the long run this is due to the incessant and inevitable interrelation between the individual beings constituting the real world: action and reaction, continuous interdependence is the condition by which all independence is sustained.

The exhaustion then of the potencies of perception compels the mind to undertake a further stage in the process of knowledge. It can do so seeing that the mind is a richer order of being than the object. And it must do so because it has other ways of exercising its unity than through the organs of sense, and must function in these ways. Further, the very process of co-ordinating the meaning of the object in terms of sense-experience has put the object in a new setting altogether and thus necessitated a further effort of synthesis. The mind has no specific physiological organ for the function it now brings into play. It calls upon the deeper resources of its individuality, those which more directly express and manifest the central unity of its life, and in that sense seem to the conscious mind to be more nearly its very self. This distinctive function is the activity of thought, which, whether in the lower form of ideas or the higher form of conceptions, is the energy of unifying diverse elements in a manner which realises in specific form the pervasive single unity of the mind's individuality. It has the character of identity or constancy of function peculiar to this all-encompassing unity; and hence the functional exercise of this unity is the source of generality and universality of thought.

The unity of individuality is certainly involved in perception, but it is implicit; it is the unity of an organic function structurally determined and uniform in its operation. In

conceptual activity, the highest form of thinking, the unity is explicitly and, indeed, deliberately brought to bear on the situation. Hence it is that thinking in the highest sense has all the character of purposive activity, an end set before the mind which it seeks to reach by an effort all its own. And since the thoughts evolved are the mind's self-devised functions for realising its own single unity, the mind invariably finds itself and feels itself freer in the exercise of the function of thinking than in the activity of perception; so much so indeed that the mind even takes upon itself to choose not merely how and when but what it shall think. In perception there is always a certain measure of constraint and even compulsion imposed on the mind.*

> The eye it cannot choose but see;
> We cannot bid the ear be still;
> Our bodies feel, where'er they be,
> Against or with our will.

In thought, however, the mind is liberated from this external thraldom and moves in a direction determined by its own inner, *i.e.*, essential nature.† Not that there is no joy in mere perception, no sense of fulfilment: but it is akin to the joy of healthy organic functioning, and is partial because localised in a certain region of the body. In thinking, the whole mind is suffused with a sense of being present as a single unity in the transaction, and hence successful thinking brings a fuller joy, a completer sense of fulfilment, and so of greater freedom.

* It is partly for this reason that most people have felt a certain reasonableness in the suggestion that our senses might well have been differently constituted, both in kind and power. No one is much impressed by a like suggestion in the case of the activity of thought.

† It would be interesting, though not perhaps very profitable, to ask why thinking should be a later stage of the knowing process than perception. One can imagine a mind which begins to know by conceptual activity, or even carries on the process of knowledge by conception alone. Probably *we* begin by perceiving because we are alive as organic beings before we become more alive through conscious effort of our own.

It must not be supposed that by this new reaction of the mind, this new advance of mental life, which takes place in thinking activity, that the mind in any way withdraws *into* itself. This is the familiar misinterpretation of the process of "reflective" knowledge. Such a view confuses the mental act of drawing upon the mind's fuller resources with an act of withdrawing from the realm of perception altogether. If the mind did so withdraw, the operation of reflective thinking would inevitably be in the end as incomplete and unsatisfying as that of perception whose incompleteness demands the new effort of the mind.* In point of fact, however, the mind finds greater fulfilment, as a concrete individual, from the course knowledge takes after reflective activity than before it. This means that what perception supplied is not dispensed with but resumed and recast through the operation of thinking. The mind may for the moment when calling upon its greater resources detach itself from perception, but its action is that of *reculer pour mieux sauter.* And even those who take this abstract view of the nature of reflective activity have to admit that it is inaccurate; for they, at least generally, speak of the need of "testing" reflective thought by an "appeal" to perceived facts, *i.e.*, they confess that the detachment does not really take place at all.† But the significance of the new step

* This can be abundantly illustrated from the history of logical theories, both those which treat perception as primary for knowledge and conception as secondary, and those which treat conception as primary and perception as secondary. The whole movement from Locke to Kant is permeated by this misinterpretation, and it still prevails in current logical theory, *e.g.*, Bradley and Bosanquet, largely owing to Lotze's influence.

† The relation between conception and perception has to be expressed in this external way by those who look upon them as detached from the start. The absurdity of the view is further indicated by the very attempt to bring them together again in this external way; for the "test" is obviously reciprocal, perception "tests" conception, conception "tests" perception. But what "tests" the "test," if they are, in fact, external to one another?

is not to be found in such an external relationship as that implied in the use of one to "test" the findings of the other. The reflective activity is a further and fuller expression of the same principle which operates in the perceptual phase of knowledge. This principle is the realisation of the individual mind through the process of apprehending the nature of the object as an independent being. It is the unity of the individual mind which is manifested in each stage, and operates in both alike And reflective activity gives a richer cognitive experience because it carries with it the acquired achievements of the earlier stage, because the mind brings to the focus of its single unity the specialised functions of perception, grasps by the conscious exercise of its unity the diverse results of the spatially constituted organs of perception in which the unity of the individual mind is least implicit. Reflective activity can only be a greater fulfilment of the cognitive process if the greater exercise of the mind's unity includes the less. To exclude the less is either to impoverish the mind when making the new advance, or to put the two on an equality of value. Both are impossible if it be the fact, as it is accepted to be the fact, that in reflection the mind does increase the mind's cognitive union with the object. The increase is an increment to the experience of knowledge, not a mere numerical addition to the previous stage of knowing. The object, as the result of reflective activity, assumes for the mind a more solid substantiality, a greater permanence and a more coherent individuality. The individual mind, on its side, establishes itself more firmly as a consciously independent real being, is more completely aware of its own existence, and has a more abiding sense of satisfaction and fulfilment. Subject and object, in short, become more reciprocally independent because of the increased conscious interdependence brought about by the later stages of knowledge. The fuller individuality of the mind deepens the sense of that of the objective real.

It must not be supposed that the advance in knowledge made

by reflection transforms or even changes the qualitative distinctness of perceptual knowledge. However intimately they are connected on the basis of their common principle, the later does not alter the peculiar character of the earlier stage. Perception in a word does not grow into reflection, and in so doing lose its specific quality as a mode of knowledge; as a bud, for example, ceases to be a bud when it becomes a blossom. This is another familiar misinterpretation.* Perception makes its own unique and intransmutable contribution to the life of the process. There is no substitute for it, and no way of supplanting it or superseding it in its own kind. So much is this the case that it is possible in principle, and seems a fact of cognitive experience, that a mind can be confined to the level of perception, and never pass beyond it. This seems mainly the level of the purely animal mind. In human knowledge, reflection, we find, can also operate by itself, *e.g.*, in abstract mathematical reasoning. But reflection can never give us precisely what we have in perception. The conceptual construction of a theory of light or sound, be it ever so accurate, cannot render to us the organic reality of a glowing colour or a thrilling note. The theory of art is not by itself a substitute for, or an improvement upon, the perception of the landscape on the canvas, or the ordered sequence of notes constituting the musical symphony. The latter is not to be had by analysis of the theory, either by way of derivation or illustration. We cannot hear a sonata better by knowing the theory of sound or even the theory of musical composition. No conceptual activity whatsoever can conjure a single perceived fact or perceptual act

* It is found most usually in so-called idealistic views of knowledge: just as the supposition of an external relation between perception and reflection is the characteristic error of the mechanical theory of knowledge. The former looks on them as moments of growth—the latter as superimposed layers. Both are mistakes for the same reason: they treat the stages apart from the unity; they both ignore the fact that it is the concrete individuality present in earlier stages which manifests itself in each, but with greater fullness.

into existence as a form of knowledge. The two are qualitatively distinct as stages of knowledge, and each unique in kind in spite of, indeed because of, being in the long run specific expressions of the single activity of the one individual mind directed towards the end of realising itself through the apprehension of the meaning of the real objective world. They are neither superimposed on one another, the later or the earlier, the higher or the lower, nor abstracted from one another, nor does the greater grow out of the less. The deeper apprehension, the greater knowledge, is a new creation of the energy of the mind, as distinctive in its order as that of perception, and as distinct in kind as one organ of perception is from another.

Just as the individual mind operates in its undivided integrity in an act of perception, bringing to bear on the present its consciousness of the past—memory—its synthesising function of imagination, its conative force, and its feeling states, so in the operation of reflection the mind concentrates its undivided energy into the prosecution of this further stage of knowledge. Reflective activity is not carried on in abstraction from the other constituent functions of the mind. Its essence lies in a completer utilisation of these functions for the purpose of achieving an increased apprehension of the nature of the object. It calls upon the resources, and assumes in its process the concurrent exercise of memory and imagination, conation, feeling, and always to some extent perception. The necessity of the last for reflection is seen in an interesting way in the operations of so-called pure conceptual activity such as we have in mathematical science and philosophy. For while the manipulation of pure concepts seems to take place independently of perception, so organic is perception to the process of conception that where direct reference to a given perceived object fails, the mind creates for its purpose such a reference and makes use of symbols which appeal to the eye or the ear. Conception cannot accomplish its task without the aid of written or spoken symbols

a singularly interesting proof of the organic connexion of the operations of perception and conception; and an equally interesting confirmation of the view just indicated—that in reflection the mind takes up a higher and yet unique attitude of knowledge—to find the mind in "pure" conceptual activity creating for its own purposes perceptual symbols to effectuate the realisation of its larger sphere of knowledge. That the mind does so in the case of reflection is precisely due to its being a greater expression of the mind's energy; the mind in reflection, so to say, overtops the limits of perception, finds perception inadequate to its demands for completer fulfilment: and because perception is none the less organically necessary to its larger activity, the mind signalises its transcendence of the limits of perceived natural fact by contriving mere perceptual symbols to correspond with and to meet the abstracter aims of reflection.

V.

The mind never thinks with mere detached conceptions alone; the individual mind is engaged as an integral unity in the operation of conceiving the object. Its aim is to establish itself as individual in conscious interdependence with individual objects; and for this purpose it carries its concrete individuality into the process. The different conceptions it devises in the execution of this aim, and the different steps by which the operation of reflection is articulated—judgment and inference—are but several manifestations of the undivided unity of the mind's life in the process. They are never detached from one another, neither from the unity of the mind nor from the unity of the aim it has in view, nor, again, from the singleness of the object it seeks to know; and these are but distinct ways of looking at the same concrete experience. The various conceptions originated by the mind are called for by the variety of independent objects in relation to which the mind's unity has to be sustained. They cannot

be known in advance of experience, but only in the experience of knowing the objects: in that sense they are always derived from experience. They are not, however, "discovered" by experience as if they were there waiting to be found out by the mind: that is once more a mechanical misinterpretation of the facts. They are operations of the mind's energy exercised in realising its unity in the face of individual objects; and we can no more speak of them being "there" before these operations are performed than we can speak of leaves and branches being "there" before or until the living energy of the tree has elicited them into being. What the term "discovery" really means to convey is that the conceptions when devised are necessary, or are "objective," and not accidental. This is true; but it is a truism. For it merely emphasises the fact that the conceptions are the vital and essential functions of the mind's unity, and that they do articulate for the mind the meaning of the object; and this is but saying that they are conceptions or cognitive operations. The mind does not create conceptions for amusement or in play, but to sustain its consciousness of unity as the vital necessity of its life; the conceptions share this necessity which urges the mind to maintain itself. But they are relative to the mind and its needs, and in that sense are constituent conditions of the process of self-fulfilment, not separate self-existing entities either primordially "innate" in the mind or externally and eternally immanent in the independent object. In a word, the object alone is independent of the individual mind, not the conceptions by which and through which the mind realises for itself the meaning of the object and in so doing fulfils its own peculiar order of being. The only independent mental reality is the individual mind itself as a concrete unity; the conceptions are no more separable from or independent of the mind's unity than the beats of the heart are independent of or separable from the energy of the heart's single action. What shape the conceptions

shall take, how many they shall be, and how comprehensively they shall express the unity of the mind—all this is not merely relative to the individual mind, but in a manner historically contingent on the character of the individuality engaged in the operation of knowledge. Hence it is that conceptions vary within limits from individual to individual, from race to race, and from society to society. There is no historical or logical basis for the view that there is a self-closed final catalogue or scheme of categories. The construction of a "system of categories" is inspired partly by the misleading influence of mere language, which is a mere historical accompaniment of the human mind and varies with its needs; partly by the application or rather mis-application to the special material of verbally embodied conceptions of the artistic imagination which seeks to give the rounded arrangement of an artistically complete whole to the miscellaneous conceptions employed by the developed intelligence of a civilised people and expressed in their language; and partly by a false interpretation of the ideal of knowledge and of the relation of the unity of the mind to the knowing process. The unity of the mind being undoubtedly that of a single individual, it is inferred that the ideal of knowledge must also be at the other end of the process an indivisible and independent unity; and since the unity of the mind in knowledge is consciously and, at its highest, expressed in the form of conceptions connected or otherwise, this terminus *ad quem* of the process of knowledge is imagined as a single compact system of such conceptions. The supposition that the end of knowledge must be found in the construction of such a system is little more than an elaborate illustration of the fallacy of composition. Because the unity of the mind is realised in definite and discrete conceptions, it is inferred that the supreme expression of its unity will take the form of a single conception containing all its conceptions; because each successive act of knowledge involves the unity of the mind, therefore the complete unity of the mind is a single

act of knowledge in which its whole unity is realised all at once; or, again, because the mind is fulfilled in operations realising its unity, therefore its supreme unity is realised in a single operation containing all its functions simultaneously. As truly might we offer the authorised biography of a man as the equivalent of the man's life or as the ideal and fulfilment of his activity; a record of the beats of the heart for the vital energy of its existence. But for conceptions being stereotyped in language, the attempt to construct such a system would hardly have suggested itself to anyone. It is not the aim of the mind in framing conceptions to seek fulfilment in either a supreme single conception or system of conceptions. The individual mind is the one source and centre of its conceptions, and these but bring forth its unity in special cases to meet special situations. It could never secure final fulfilment in any one conception, however comprehensive, for the simple reason that life of the mind, like that of any organism, consists in actual activity not in coming to an end of itself, in living not in having lived. The mind in energising in knowledge is constantly finding fulfilment and satisfaction; it does not seek to secure a single supreme state of satisfaction. The fact that the mind embodies its unity in conceptions does not, in a word, either imply or even suggest, still less require, that there should be a single and self-complete conception or system of such conceptions; for to attain such would be to extinguish the very fire it is meant to sustain. The end of knowledge is not an ideal conception, but mental satisfaction or fulfilment, and this is not one final state but a variety of states in which the single living individuality is realised, sometimes with more completeness, sometimes with less. For the mind a less comprehensive conception is relatively just as necessary to the mind's life as a more comprehensive, for through both it sustains its individuality in the face of the world of objects. In the strict sense a conception is not the mind's unity at all but a function or operation of that unity. The unity of the mind is

nothing less than the whole individuality of its being as a spatially organised embodiment of mental energy. Neither in the interests of knowledge nor in the nature of conception is there any ground therefore for constructing a system of conceptions. Conceptions only subsist in the operations of the individual mind, no matter how many there may be or what their character.*

The difference in kind amongst conceptions presents an interesting parallel to the different kinds of perception; and the difference is certainly as real in the one case as in the other. At first sight it might seem possible to reduce (or, as it is sometimes said, "deduce") one conception to another, *e.g.*, quality to quantity, purpose to mechanism, or even all of them, to one supreme conception, for example, unity or order. And the attempt has often been made, and probably will always be made. The search for the philosopher's stone has all the fascination of an elusive phantom, and a phantom which persists, gains through its very elusiveness some of the characteristics of an ideal. An obsession may assume the quality of a baffled instinct and be as difficult to eradicate. But in spite of all the efforts the mind has steadily refused to admit that one conception which it devises and requires to secure its sense of unity can be replaced or displaced by another. The long struggle for cognitive primacy between mechanism and end sufficiently demonstrates this; and it is typical of every other case. Every conception expresses the mind's function of unity, but each conception is not its bare unity, but a different embodiment of its concrete individuality of action. The reason why the effort to reduce

* The attempt to treat a system of conceptions as the objective totality of the mind's unity, as the completed utterance of the mind, and therefore as equivalent to the mind itself, is in the long run a purely mechanical view of knowledge. It treats the mind as a machine whose product is the mechanical equivalent of the energy exerted in the process of knowledge, just as the work done by an engine is mechanically equivalent to the energy exerted by the engine. So that the mind's energy just equals the system of the categories.

all forms of perception to one form has not been so persistent is merely that the differences between, *e.g.*, eye and ear, are so palpable that it seems folly to pursue the attempt. Touch, it is seen, may be common to both; just as sensitive responsiveness is common to both; but this community only throws into greater relief the irreducible difference between their operations. The modes of perception are separate channels of mental communion with other objects, and have their bounds and quality determined by the statutory framework of the constitution of the individual organism.

The conceptions, again, are not generalisations from other cognitive experiences, whether it be percept or image. They are ways of grasping the meaning of the object as an individual reality; and as expressing the unity of the mind's life they are universal operations of this unity, ways in which the single mind, the enduring agent in the process, invariably works to secure its sense of individuality. Generality is an attribute of a universal, but not its essence, and a mere generalisation, where it is not simply an exaggeration due to the play of imagination, may give knowledge in "a general way," but not knowledge of anything in its individuality. All knowledge is directed upon and towards individual objects; and to know a "thing in general" is not to know anything at all. And even if conceptions could be regarded as generalisations of percepts, this would still leave unexplained how the mind comes to take the step. A perception of an object is genuine knowledge, and *qud* perception needs nothing added to it to make it knowledge in its own kind. A generalisation of a percept is not demanded by perception; but is due to some other function of the mind's life, and must therefore have another interest in view than that supplied by perception. A mere generalisation of a percept would add nothing new to knowledge at all. It would add nothing to the validity of the perception; it would not be another kind of perception; and since it would be tied to perception, it would not advance the

mind's knowledge to a higher degree of fulfilment. It would be an unaccountable excrescence on the tree of knowledge.

VI.

The advance which the mind makes at the conceptual level of knowledge is brought about by successive reactions of its unity on the increasing complexity of the object which comes to light as each act is consciously made to grasp the object in its integrity. The meaning of the object increases as the mind finds more meaning in it, and the process can therefore only cease in either of two ways: either the object presents no further complexity to be grasped, or the mind has no further resources to meet the complexity of the object presented. The complexity presented by the object is always ahead of the effort of the mind to meet it, and generally not far ahead, otherwise the mind becomes temporarily overwhelmed, as indeed happens in familiar states of mental perplexity. To prevent this from constantly recurring, the mind deliberately and artificially restricts the range of content in the object to its capacity to meet the situation. It "abstracts" objects from a larger whole, divides objects from one another, "isolates" its objects for purposes of investigation. The restriction within manageable proportions of the complexity of the objects dealt with enables the mind to react gradually on each complex situation as it arises. The reaction takes the form of connecting the different portions so far unified by the functions of judgment and inference. These operations are acts of integration made by the mind to secure unity and order among conceptions, and as a result to give a completer consciousness of the individuality of the object than is possible by the use of separate conceptions. The form which this act of integration takes in the case of the judgment is that of holding conceptions together simultaneously, and in the case of inference that of a consequential arrangement of conceptions. It is convenient perhaps to speak of inference as a unity (or system) of judgments,

judgments as a unity of conceptions, just as we sometimes speak of conceptions as a unity of percepts. But this is only permissible if we keep in view that it is the same central unity of the individual mind which is operating in every case, and is realising itself in each case more fully as it becomes thus more fully conscious of the individuality of its object. The unity of the judgment is not effected by the conceptions coming of themselves together, or by letting loose some secret spring in the mind. Judgment is an active operation of the mind as much and in the same general sense as conception. And it is a greater expression of the unity of the mind because it is a unification of conceptions which are themselves forms of unity. Hence it is that the mind feels in judgment that it has a greater hold over the object, is more fully aware of its individuality as a distinct and independent being. The mind's own individuality is more fully and consciously realised in the act of judgment, and the conscious substantiation of its own being implies a corresponding substantiation of the object. So again in inference, the mind's unity is more fully expressed by a still more comprehensive operation of unity, it is conscious of its individuality more completely, and the individuality of the object has for the mind a greater meaning; it is a consciously systematic whole of content.*

The judgment, then, is not a mere development of the conception as such; it is a new distinctive act of the mind; nor is the inference a mere development of the judgment, but a new operation of the single individuality of the mind. The only development that is affected is that of the concrete

* The question whether conception precedes judgment or again whether judgment precedes inference must be carefully distinguished from the significance of each of these as mental operations. Which of them is prior in time depends largely on the state of an individual's knowledge. In actual experience a judgment may be summarised in a conception, just as an inference may be summarised in a judgment; and again a conception may be articulated into a judgment.

living individual mind. To speak of judgment developing into inference is either a figure of speech or the substantiation of a mere function. And the suggestion that with inference judgment passes away altogether in the process of knowledge, and "gives place" to something higher, is again inaccurate or a figure of speech. The inference only has actuality as an effectual operation of unifying judgments, which are thus no more dissolved in the process than the organisation of the organs of the body implies that the organism "cancels" the organs. In inference judgments subsist in the same way that in judgments conceptions subsist. In a word, conception, judgment and inference are qualitatively distinct acts of the individual mind required, each and all, to secure its end.

Judgment, which takes the form of the subject predicate relationship, is only possible after the stage of perception is passed. The subject is in general a relatively richer complex of content of the object grasped as a single unity; the predicate is a part of this same object at once consciously detached from and united to the subject. The mind grasps both in inseparable union, and in so doing consciously realises the meaning of the individuality of the object. The supposition that in some way the subject in judgment is outside the mind, and that the mind "applies," predicates to this subject is a confused misstatement of the actual situation, largely due to the mechanical interpretation of the relation of mind to object in knowledge. The subject in judgment is no less a part of the single process in which knowledge consists than the predicate. The object remains an independent real being through the whole process.* Knowledge is a mental operation pure and simple, the way in which the mind becomes conscious of the meaning of the object. The object as a real being has no more to do with our way of

* The treatment of subject and predicate in a judgment as in some way separate existences is probably due to a confusion of the subject-predicate relation in judgment with the subject-object relation in experience.

realising truth than it has to do with us making mistakes in the process; truth and error are both mental, the one the result of fulfilling certain special laws of mentality, the other of failing to fulfil them. That the subject is only in general a richer complex than the predicate is seen in the fact that sometimes both subject and predicate have the same degree of complexity, and in that case it is a matter of indifference which is taken as subject and which as predicate. In other words, there is nothing in the nature of the judgment which compels us to take one conception as always and alone subject, and another as always and alone predicate. The stage of knowledge reached alone determines which is subject and which is predicate. In the imaginable limit, were we to know the whole universe, the relationships of predicate and subject would be completely reciprocal.*

* That inference is only found at the level of conceptual activity seems generally to have been admitted. That judgment should not have been confined to the same sphere of the knowing process is due in large measure to a misinterpretation of the relation of perception to conception. We find writers speaking of "judgments of perception" in the sense not simply that judgments deal with results of perceptual activity, but that perception is itself a judgment. Some even go so far as to speak of the "perceptual judgment" as the ultimate judgment of knowledge. But for the influence of language the phrase "judgment of perception" would be seen at once to be unmeaning. Perception as such requires no words at all; it does not operate by the use of language, but through the physiological structure of the organisms, and is complete in its kind as a level of knowledge. We apprehend the things of sense about us by the exercise of our sense organs, and these need no other intervening agency to establish mental communion between the mind and its object. This can be seen on a great scale in listening to a piece of music or looking at a picture. Our apprehension can be complete: and speech seems even an intrusion or an irrelevance. Language is devised by the mind in the interests of conceptual activity alone, and not till it arises do we use it. But so does it distort the actual character of knowledge that when we apply language to objects which we can also apprehend by perception, we tend straightway to identify the linguistic embodiment of a conception with the object as apprehended by perception. Hence the term "judgments of perception." It is due to a confusion between the conceptual recasting of the individual object

VII.

The complex and detailed articulation of inference is required by the variety of ideas and conceptions which the mind evolves on its way to self-fulfilment. And inference more completely realises its sense of individuality than any of the other operations, and correspondingly the object assumes a definite individuality of meaning which is unattainable at an earlier stage. But the final operation of the mind in knowing is not inference, but a single concentration of the mind in which it grasps the individuality of its object as a single intelligible whole, without going through the detailed process of connecting its parts, and yet with all that detailed connection subsumed in the act of comprehension. This stage is intuition or mental vision, inseparable from feeling and carrying the sense of completed mental activity or free self-fulfilment. In this form the mind finds its highest satisfaction, certainty with coherence, unity of individuality and conscious union with the individuality of its object, in a word, complete conscious independence through interdependence of subject and object.

This is more readily attained in the mind's relation with a small range of objects than in relation to a larger, with some kinds of objects more than with others. And wherever it is attained then the aim of the knowing process has been reached

by the mind and the perceptual apprehension of the same object; and the confusion is effected by the application of language to perceived objects in the interests solely of conceptual activity. Hence it is supposed that when we say "this tree is green" we are dealing with the object both from the conceptual and from the perceptual point of view at once. But the statement "this tree is green" is not a deliverance of perception: it is a complex of ideas alone. The perception of the tree is not utterable in speech because it needs no utterance: it is direct knowledge, immediate communion of the mind with the object through the exercise of sense organs. That is why animals who equally perceive objects use no language and need none for their knowledge.

—in that it finds at once truth and self-realisation through the channel of knowledge. The goal of knowledge is not a system of thoughts outside the mind, but a state of mind. A system of knowledge itself only has being in and through the process of reacting or evolving it. The supposition that the aim of knowledge is to establish or find a system of thought holding it over independent of the mind, is due, as already said, to confusing the expression of knowledge in language with the realisation of knowledge as a mental process. The latter alone is the reality in the situation; the former is an artificially devised means for rendering permanent the results of actual knowledge. A system of knowledge means, strictly considered, a systematic way of knowing. To place the achievements of knowledge on record is not to put knowledge in some ideal realm beyond the mind. The embodiment of truth in a book is not the "objectification of truth"; we are mere victims of our own devices if we confused these two. Knowledge only subsists as a mode in which the mind is realised, and it is only realised as it actually grasps its object, for in so doing it finds itself real and finds the meaning of the reality of the object. An organism does not live in what it has done, but in the actual exercise of its vital energy. To the mind that knows, the world of objects is pervaded by new meaning, it becomes a new world sustaining the living individual by a new vision which is also a new emotion. A poet does not subsist in his written poetry, but in his poetical outlook on the world. A religious individual does not live by constantly recalling and reformulating his creed, but by actual communion with God. A moral agent does not estimate his moral achievement in terms of his past acts, most of which he has probably forgotten, but in the clearness of his actual insight into the moral situations of everyday and his readiness of accurate response to the demands of the hour. So in the attainment of knowledge. The "ideal," which alone is effective and significant, is the possession of a power of reflection and insight which enables the agent

to realise his place in relation to other beings, and to grasp their meaning by the free activity of his thought. This is to make knowledge "real," this is to know the "truth," this is to attain the concreteness of knowledge as a vital experience.

Hence the goal of knowledge is not a far off ideal, but a realised experience. The truth is not the whole of reality, but a conscious realisation of a whole individuality.

Meeting of the Aristotelian Society at 22, Albemarle Street, London, W. 1, on June 2nd, 1919, at 8 p.m.

X.—PLATONISM AND HUMAN IMMORTALITY.

By W. R. Inge.

We have all read the recent controversy in this Society as to whether the individual has a substantival or an adjectival mode of being. The discussion was conducted on both sides with such consummate ability, and with so much courtesy and candour, that it made an important contribution to philosophical thought. Both sides plainly owed much to Hegel. Both held that the Absolute must include individual spirits as essential constituents of its own life. But while Professor Pringle-Pattison argued that "individuation is the very method of creation, the central and most characteristic feature of the cosmic evolution," and that "the finite spiritual individual tends to appear as the only conceivable goal of the divine endeavour," Dr. Bosanquet, who in an earlier work had said that "all finite individuals are in ultimate analysis connexions of content within the real individual to which they belong," is nearer to Spinoza, for whom both things and persons are ultimately only modes of the existence of God. He uses such adjectives as "apparent" and "superficial" of the separateness of human personalities, and seems to his opponents to regard individuality as an enigma, almost as a scandal; or, in trying to escape this conclusion, he is accused of falling into inconsistency.

Platonism, as I understand it, agrees entirely with neither, since it parts company with Hegel at an early stage. It is nearer, perhaps, to Dr. Bosanquet, inasmuch as it agrees with him that "the total expression of the Absolute within the temporal series is inconceivable;" but it would not agree with

those who hold that if all psychic life were so mixed that all finite imperfections were made good by supplementation, the result would be absolute perfection. For Plato and his disciples, the relation of God to the world, of reality to appearance, of eternity to time, is a one-sided dependence. As Coleridge, I think, said, if G = God, and W = the World, G—W = G. To make the world an essential factor in the existence of God would be, in the opinion of this school, to subordinate the Absolute to the categories of Time and Purpose. Evolutionary metaphysics seem to imply that through the whole time-process the Absolute is only in process of self-realisation, in which case it can never come to itself. This philosophy assumes the untenable theory of progress in the universe as a whole, and indeed derives much of its attractiveness from this amiable dream. For the Platonist, the One, acting through its first determination, Intelligence or Spirit, creates first the world of soul and souls, which is known to us as a divine principle struggling to liberate itself from alien elements, and then the world of appearance. The relation of the Creator to the creatures may be compared partly to the relation of a man to his own photograph, and partly to that of a poet to his poems. The real Shakespeare is not the poet plus Hamlet and Lady Macbeth and Lear and Iago; and the ultimate reality is not God plus the World, or God plus the society of finite spirits, but (as will be argued presently) a God whose thoughts are eternal values energising as acts of will. God is essentially a Creator, but his creatures are not parts of his essence. Platonism also rejects the commonly assumed equivalence of finitude and imperfection. Every perfect being is perfect in having a characteristic form and outline, which in the spiritual world is no obstacle to compenetration and universality. Here, I think, some of the mystics, *e.g.*, the writer of the *Theologia Germanica*, have gone too far, in saying that a man ought to aim at being "neither This nor That." We should not improve finite beings, still less convert them from

appearance to reality, by shaking them up in a bag till they should be all reduced to a homogeneous jelly. Evil, if our experience is worth anything, is not always good in the wrong place; its essence consists not in disintegration, but in rebellious integration and proliferation, like the cells of a cancer. The logical climax of the theory of purification by fusion seems to be the "Ich bin entworden" of some medieval mystics. Their English contemporaries were sounder when they said that the good man "listeth not to *unbe*."

As against the view that individuality is "only an appearance," the Platonist asks, "an appearance of what?" For Platonism entirely agrees with the saying of the Quaker, Isaac Pennington, which contains in a few words the whole creed of Platonic mysticism. "Every truth is a shadow except the last; but every truth is a substance in its own place, though it be but a shadow in another place; and the shadow is a true shadow, as the substance is a true substance." Mr. Bradley seems at times to juggle unconsciously with two meanings of "appearance": (1) A partial or imperfect representation of reality; (2) an illusory semblance of something which is not there. For the Platonist, individual souls are not mere appearance—in fact, nothing is *mere* appearance. Souls belong to the real, the intelligible world; but their reality consists not in their "uniqueness" or separation, but in their inalienable union with the Soul of the All, which is the creative energy of the Divine Spirit. And yet they are not merely "connexions of content," but connected reals. Real values can never be parts of anything else. They can never be absorbed.

The right starting-point for a discussion of Platonic immortality is, I think, Professor Pringle-Pattison's illuminating saying that "Idealism means the interpretation of the world according to a scale of values." This is the root of Platonism. The famous Ideas are absolute values, and the standards of all valuation. They are, as Berkeley says, "not figments of the mind, nor abstract ideas in the modern sense,

but the most real beings, intellectual and unchangeable." Man does not make values any more than he makes reality. He apprehends them as objective truths. The assertion that all values are subjective and conditional is contradictory, since we cannot pronounce them to be subjective and conditional except with reference to a standard of truth which is independent of our judgments. To deny any thought which is more than relative is to deprive even scepticism of its foundation. As Münsterberg says, "Every doubt of absolute values destroys itself. As thought it contradicts itself; as doubt it doubts itself; as belief it despairs of itself."

It is in this world of values that we find our immortality. For the absolute values are supra-temporal; they are eternal and indestructible. When Plotinus says that "nothing that *is* can ever perish," and when Höffding says that "no value perishes out of the world," they are saying the same thing.

As for the relations of existence and value, it should surely be obvious that what has no existence has no value, and I should add that what has no value has no existence. I do not agree with those who hold that natural science gives us a world without values. Existence is itself a value. The sharpest and most decisive of all our value-judgments depends on our answer to the question, "Is this statement true?" The difficulty in reconciling science with ethics and æsthetics is not that the first gives us no values, and the other two no facts, but that we are confronted with three idealisms, each claiming absolute authority, and they refuse to coalesce. Truth, Goodness, and Beauty are the three-fold cord by which "our waggon is hitched to a star"; and the three are clearly not independent of each other; but each has its own peculiarity; science, for example, makes abstraction by ignoring degrees of truth and reality, while all moral judgments are essentially graduated. We can neither entirely unify these three systems of value, nor entirely separate them. To repudiate any one of them is fatal. For example, "the idealistic reaction against

science," which gives Aliotta the title of his book, is the worst of modern infidelities. It leaves us with our ideals in the air, and with the bastard faith of *fidéisme*.

Platonism is a philosophy of values, but of values which are living forces—at once fully realised in their own sphere, and constantly creative in a lower sphere. The world of time is thus "a moving image of eternity." Generation, Plato says in the Symposium, is a sort of eternity or immortality. In mortal things, succession, which has only an appearance of unbroken identity, gives an imperfect participation in immortality. The soul has a secure footing in the eternal world, but the empirical *ego*, the subject of consciousness, has not. It may turn its back on the eternal world, and identify itself with the perishing world of change and death. For this reason Plato distinguishes the higher and the lower soul. Some souls are no better than spectres (*Phædo*, p. 81): these are they that have not freed themselves from "matter," that is to say, from entanglement with the perishing and unreal world which the mind constructs out of sense-impressions. In the *Timæus* (pp. 43, 69), besides the immortal soul there is a mortal soul consisting of the passions and affections, while sensation is only an impact of body upon soul. The immortal soul is the intelligent and purposeful character which the man who is on the right road finds to be common to himself and to the world. It is an organ of the eternal law of the universe.

Two questions press for an answer: (1) Is the individual immortal? (2) What is the relation between immortality and survival?

Royce says that "the foundation of a philosophical conception of immortality is the real individuality of the self as known in and by God. Every individual possesses a form of consciousness quite unlike our mortal consciousness." But if the two forms of consciousness are "quite unlike," what is the meaning, and what is the ground of the assertion that both are "possessed" by the same individual? If consciousness is

regarded as the essential part of the self, can we justly speak of the individual as possessing it? It seems like that very common, but surely quite unjustifiable, notion that a man's soul is somehow both himself and the most valuable of his possessions. Who or what is the owner of a soul which may be "lost"? Platonism certainly holds that every individual soul corresponds to a distinct Idea in the mind of God; but it does not emphasise either "uniqueness" or "consciousness" as Royce for instance does. If the being of each soul, as a separate entity, is constituted by its uniqueness, it is not easy to see how the same soul can be incarnated several times. Yet this doctrine was held by most Platonists. Whether it has a secure place in the system, I doubt; it seems to me to introduce difficulties into it; but it was certainly held. As for consciousness, it has not for Platonists the same importance that most modern philosophers give it. The Greeks were not much interested in the persistence of the *ego*, except from the point of view of retributive justice, which seemed to them to necessitate reincarnation. They certainly did not care about the perpetuity of the empirical *ego*, which in truth is a nightmare. It was axiomatic for them that the soul can only survive in the same sense in which it may be said to have pre-existed; and the empirical *ego* did not pre-exist, for, even granting the existence of racial memory, we are not conscious that we are remembering. The difficulty of supposing that each new birth makes a permanent quantitative addition to the sum of existence is so enormous that we cannot help being surprised at the success with which orthodox theology has prevented the theory of pre-existence from taking root.

Keyserling, whose *Unsterblichkeit* is less known in this country than it deserves to be, says that mysticism (which in this connexion may be taken to include Platonism) always ends, whether it likes it or no, in an *impersonal* immortality. "Impersonal" is a negative term, and we have to consider

what the Platonist wishes to claim, as well as what he wishes to reject. Eternity, for him, is timeless; he cannot allow that anything which really exists is passing into nothingness, or has to wait for the future to come to birth. What is real in our personality is not dependent on the limitations imposed upon us by the time and place of our birth; it floats free of these accidents. It is, therefore, difficult to predicate immortality of the "compound" which makes up our individuality as known to others. But it would be more correct to speak of this view as a liberation of the idea of personality than as its negation. The soul is here in prison; the activities proper to it cannot be fully exercised. There are indeed two conceptions of individuality, which are often confused. True individuality is attained by intensifying the inner life by enriching its contents. And this enrichment can only be gained by drawing all experience into it, as food for its life. We are all that we can "make our own." But this enrichment is not possible without abandoning the wish to stand at the centre of our experience. As St. John of the Cross says, "We must know that the soul, so far as it is spirit, has nothing high or low, nothing more or less deep in its essence, like bodies that can be measured by quantity. There is no difference between what is within and what is without. Leaving this meaning of a material and quantitative centre and depth on one side, we call that the soul's deepest centre which is the furthest goal to which its essence, virtue, and power of movement and operation can reach; and this centre is God." False individuality cuts all these channels of communication, and makes a man not only his own centre but his own circumference. The real penalty of a life of calculating selfishness is that which the Psalmist indicates in the words: "He gave them their desire, and sent leanness withal into their soul." Many a career of successful ambition is open to the retort of Dr. Johnson: "Tell him his soul lives in a garret"; and in some cases, though not the worst, the man is

uneasily conscious that it is so." The negative side of Platonism —the cleaning and scrubbing and slicing away which belong to the *catharsis*—is an effort for *essentialisation*, not for mere denudation. The Platonist knows the value of cleanliness and fresh air; he feels dirty, "cabined, cribbed, confined," while he is "in the flesh." Therefore, when writers like the author of the *Theologia Germanica* urge us to cut out, once for all, every suggestion of egoism ("Be wholly bereft of self"), they are trying, in a rather impetuous manner, to cut the rope which tethers us to a narrow circle of experience. Frankly, I see no other road to immortality for the consciousness which we commonly call our self, than to condemn to death the false self which clamours for a promise of perpetuity. The soul may, in Biblical phrase, "lay hold of eternal life" by identifying itself with the unfailing springs of truth, beauty, and goodness; or it may, in the words of Plotinus, condemn itself to "live with shadows," Here and Yonder, now and hereafter. I think the "consciousness of self" has been made far too much of in modern philosophy. I am never "conscious of myself" without being very unhappy; and so far as I can analyse my feelings, that unhappy consciousness is precisely a feeling of isolation and imprisonment. Self-consciousness is, in my experience, only another name for acute psychalgia. I can entirely understand what the author of the *Theologia Germanica* meant when he said, "Nothing burneth in hell but self-will." When I think of the future life, I believe my first thought generally is that I shall be finally quit of the very ill-constructed "compound" which enters upon its sixtieth year this week. I do not recognise this compound as either myself or my most treasured possession, and I acknowledge only a very limited responsibility for its many defects. This is, I think, Plato's view, both in the tenth book of the *Republic* and in the *Timæus*.

The second question concerns the relation of eternal life to survival in time. Belief in survival may be a corollary of

the belief in eternal life, or it may be a very poor substitute for it. That the Divine Ideas will always be active in the world of appearance is a belief which follows necessarily from the fundamental articles of the Platonic creed. In so far as we have succeeded in being, in our relation to the Divine will, "what a man's hand is to a man," we may be sure of employment till the end of time. But this is not what most people dream of when they think of survival. They want to continue to be human beings, and to have, as human beings, a finger in whatever pies the future may be cooking. The fact is that belief in real immortality was burning very low before the war, and I have not noticed any change yet. Ever since the industrial revolution, and the social revolution which accompanied its rise and is likely, I think, to share its downfall, Western civilisation has been living on an apocalyptic dream. In the teeth of all the discoveries of science, and all the lessons of experience, it has clung to the delusion that there is a law of progress, in virtue of which human nature becomes appreciably better from generation to generation, and the world—perhaps the universe—is advancing towards perfection. This delusion has profoundly affected metaphysics. The problem of evil has been met by the theory that though the Deity is not omnipotent yet, He is on His way to become so. He means well, and if we give Him time, He will at last make the world a paradise. Human beings, too, as a rule make a very poor business of their lives here. But continue their training after they are dead, and they will all ultimately arrive at perfection. I find this assumption even in the very interesting contribution of Professor Stout to the Symposium. He says, "In some way or other the life-history of the individual will be continued so long and in such a way as to make its continuance worth while to that individual," though "countless ages may have to elapse before the conditions are ripe for my continued self-development." But what are the grounds for this confidence? Do we always observe our neighbours, or ourselves for that matter,

growing better as we grow older? May not the eternal laws be as well exemplified by the ruin of those who disobey them as by the felicity of those who follow them? Unless we assume that there is a natural tendency or law that all creatures should advance towards perfection, this argument for survival or reincarnation surely falls to the ground. It has also profoundly affected political science. By a portentous snobbery, it is assumed that the actual course of political change is a notable progress towards a higher morality, a deeper wisdom, and a better social order. "Thousands of rams, and ten thousands of rivers of oil" are offered to that *curieux fétiche*, democracy, not so much because anyone really believes in it—the Labour movement has already frankly discarded it in favour of open brigandage and civil war—as because it is supposed to be the line of "progress." The conditions of the Messianic dream, in which the first Christians lived, and which would have involved the new religion in its ruin if Greek philosophy had not come to the rescue, have been reproduced in our time. The West has been dreaming of an apocalyptic Kingdom of God upon earth, to be established either by evolution or by revolution. The poor Liberals, now almost extinct, pinned their faith on the former method, the Bolsheviks have made a hell upon earth to expedite the latter. It is an alternative eschatology to that of Christianity and Platonism: there is no room for both. One might have expected that natural science, which knows the facts, would have protested against this strange superstition. Men of science know very well the fate reserved for this planet. They know that evolution and involution succeed each other in cycles. They know that the Mousterians, who lived perhaps twenty thousand years ago (I do not know the precise date when they flourished; perhaps no one knows it) had as good brains as we have. They know that the Cro-Magnon skeletons are superior, both in stature and brain-capacity, to any modern race. They know that the ancient Athenians and medieval Italians were far in advance of us. But they were carried

away by nineteenth century enthusiasm. They did what Dr. Bosanquet warns us not to do, and threw their ideals into the future, "which is the death of all sane idealism." And so Europe swaggered along to the brink of the precipice over which it has fallen, and the whole social order which has given us railways, telegraphs and telephones, Birminghams and Essens and Chicagos, Andrew Carnegies and Anarchist Societies, lies in irreparable ruin. I am concerned with these events now only because they explain why the conception of immortality has been displaced by that of survival in time. No one would wish to survive in time unless he was confident that he would be an improving member of an improving world. But there is not the slightest reason to think that our characters would improve if we lived as long as Methuselah; and there is not the slightest reason to think that the race which in 2,500 years has only "advanced" from Sennacherib to Von Bissing, Enver, and Trotsky, will do much better in the next 2,500 years. We have learnt a great many of nature's secrets; our torpedoes and poison gases are triumphs of ingenuity. If the chemists learn how to disrupt the atom, the next war may lead to the entire extermination of the human race. In that case, some other species must hand on the torch of progress. There are possibilities in some of the so-called lower animals, if man would leave them alone. But complexity is one thing, progress is another. Machinery is a Frankenstein-monster which now dominates us. It prevents us from leading a healthy or a happy life. Existence has become so difficult, so anxious, and so monotonous that half the world is in blind revolt against the conditions under which we live. In all probability what we call progress is a transient phase in the history of our species. Sooner or later, we shall reach a stable equilibrium, like almost all other animals, and thenceforward our annals will be a blank. The human race may improve, if we become practical eugenists, or it may continue to degenerate, under the influence of the counter-selection which is now going on. But stability is its

normal condition. What changes were there in the ten thousand years before history begins?

The belief in the progress of the race is supported, not by history, but by histories. For though the Deity, we are told, cannot alter the past, historians can and do, which is perhaps the reason why they are allowed to exist. But the evidence for human survival, which for anti-Platonists must be of a concrete and tangible kind, has to be found in another manner. Accordingly we have lived to see a revival of spiritism, masquerading as science, under the name of psychical research, and of necromancy. These stories are offered in all seriousness as evidence for the immortality of the soul. Persons who ought to know better have given us descriptions of the behaviour of the disembodied ghost—

> Quo cursu deserta petiverit, et quibus ante
> Infelix sua tecta supervolitaverit alis.

The subject is too humiliating for jest. For the Platonist, such survival would be a dreary disproof or postponement of the only immortality that he cares for.

I do not deny that the illusion of progress has had some remarkable results. It has added greatly to the expensiveness of the crash which we are now witnessing. It may be compared to the carrot which the costermonger causes to dangle before his donkey's nose; it moves the cart. It may be as good as the alternative method of moving it, which is to drive a tandem consisting of a sheep and a sheep-dog.

The most respectable side of the belief is that which is based upon faith in a Divine purpose in history and in each individual life. If the course of the world is a reflection and a creation of the Divine goodness, it must be possible to discern the working-out of beneficent design in the succession of events. Some of these designs, we may guess, are of far wider scope than any single life. They may embrace the whole history of a nation. How indeed can we have any confidence in the

objective reality of the Ideas, unless they manifest themselves, as far as possible, in the world of appearance? And if an ideal is an idea in process of realisation, what is this but to find progress in human affairs? This argument is quite just. There is no law against progress, and progress, as a sporadic phenomenon, is an observed fact. That is to say, both individuals and races may sometimes be observed evolving in some way which we can see to have value. It may be that these developments of Divine plan are universal; it is certain that there are many which we do not perceive or understand. But my point is that they are all, whether they concern the life of an individual or the career of a nation or even the history of a planet as a unitary whole, finite schemes which have a beginning, middle, and end. However perfectly they realise the design of the Creator, they run their appointed course, and then pass out of phenomenal existence. This is so certain that objections are not worth discussing. It follows that the value of these Divine schemes, as realised in the world of time and place, is not bound up with their duration. If it were, they would have no value; for in the world of appearance they will all be as if they had never been. Whatever value they have is supratemporal or timeless; and if we look at the matter steadily, we shall see that except against a background of absolute and eternal values the products of evolution are a mere phantasmagoria. Time hurls all its products into nothingness. If there is no sphere of existence where "all that was, lives ever, past recall," man walketh in a vain shadow and disquieteth himself in vain. Therefore survival in time of an individual life is not a thing to be expected, and its non-survival is no presumption against its immortality. When our course here is run, we take our place in the eternal order, the place which we have chosen by the general trend of our interests, sympathies, and ideals during this life. Tennyson's often quoted line, "Give her the ways of going on, and not to die," if applied to the individual life as we know it, seems to me more than we have a right to ask for.

Individual souls will always be employed in carrying out finite tasks; but as we know nothing of any previous lives that we may have lived, we may suppose that the connexion is so entirely cut that the question of identity becomes almost meaningless. It is often assumed that the desire for individual survival in time, under conditions not utterly unlike those of this earth, is almost universal. I believe that this is a great mistake. Desire for escape from the chain of rebirths has been as widely felt as the desire still to mix in terrestrial affairs. Not to speak of the Asiatic religions, the Orphic brotherhood yearned to be delivered from the "grievous wheel" of reincarnations, and Plato's heaven is uninterrupted contemplation of the unchanging archetypes of truth, goodness, and beauty. These archetypes are the never-failing springs of life in time, and the beatified spirit, we may suppose, is by no means cut off from knowledge of the world of becoming; but the Platonist, like the Christian, looks upon the life which some are so anxious to prolong beyond its term as a pilgrimage through a strange land.

We may claim continuance in the following senses:—

(1) The stream of life, of which we are a ripple, flows on and on. We may look upon our lives as a temporary bubble on the water. But *we* are the river, not the bubble.

(2) The very basis of life is passed on. The germ-plasm is potentially immortal. This discovery of recent science has not affected the popular imagination, and we cannot expect that it should. If the germ-plasm lives on, it is certainly not the basis of individuality. Nevertheless, as the Russian philosopher, Solovyof, insists, it symbolises the spiritual continuity of the family, which is still greatly valued by many persons. But it is worth observing that such immortality as that of the germ-plasm belongs only to the very simplest and lowest forms of life. In all the higher forms, death removes worn-out material, and birth renews it.

(3) Our work abides. The world is probably changed permanently, in certain small ways, by our sojourn in it; and (to quote Solovyof again) it is only in the future that the past will attain the fulness of reality.

(4) Our ideals, in so far as they are countenanced by the laws of the universe, abide and energise for ever. Clough speaks of the patriots who die "with the cause that perishes with them," and Ovid, in one of his finest lines, of those *qui bene pro patria cum patriaque jacent.* But such defeats are temporary accidents. Ideals do not die. And so far as we have identified ourselves with them, we are secure of our perpetuity, or of an endless series of resurrections.

If we demand more than this from futurity, great difficulties arise. As we never remain the same for two days together, for which self do we desire everlasting continuance? For our last—the self with which we died? It is to be hoped not!

It is, I am convinced, a great mistake to suppose that most people have a strong desire for the permanence of their conscious individual existence, as they know it on earth. The questionnaires collected by American psychologists reveal that such a craving is the exception rather than the rule. In the Asiatic races the prospect of individual survival seems to be positively unwelcome. The Buddhist faith rests on horror of mere continuance. Nirvana is a final escape from the Tennysonian heaven of "going on and not to die." The prospect of mere continuance has no attraction for Plato either. For one thing, he sees that the continuity is illusory. The self of conscious experience does not preserve its identity. The only perpetuity which the Platonist values is the continual effluence from the creative Mind, in which alone the soul maintains its self-identity.

We often ignore the obvious truth that much of our lives is spent in what Plato would call the contemplation of the timeless or eternal mode of existence. Baron von Hügel

reminds us that "all states of trance or indeed of rapt attention, appear to the experiencing soul, in proportion to their concentration, as timeless, *i.e.*, as non-successive, simultaneous, hence as eternal. Hence the eternity of the soul is not here a conclusion drawn from the apparent God-likeness, in other respects, of the soul when in this condition, but the eternity, on the contrary, is the very centre of the experience itself, and is the chief inducement to the soul for believing itself to be divine. The soul's immortality cannot be experienced in advance of death, whilst its eternity, in the sense indicated, is or seems to be directly experienced in such this-life states; hence the belief in immortality is here derivative, that in eternity is primary" (*Eternal Life*, p. 26). Royce instances the enjoyment of a melody as an example of the mind's power of grasping a *totum simul*. Perhaps we might say the same of grasping an argument as a whole, memory of an event as a whole, and estimate of a character or action as a whole. It will be observed that all these *totum simul* knowings, not excluding that concentration of the mind on an idea which produces the mystical state, are essentially valuations. It is when we enter the world of absolute values, estimating our temporal experiences by that standard, that we have what Baron von Hügel ventures to call direct experience of eternity. There is much confusion in our fear of extinction. We live, as I have said, a great part of our lives in a timeless world of values, which is in no danger of perishing, and we all admit that this part of our lives is the part which we should be sorry to lose. We shall not lose it; or, since these experiences are not our property but ourselves, it is enough to say that it will not be lost. As regards the persistence of temporal happenings in the thought of God, there is no difficulty in supposing that God's "specious present" may cover the whole of time, provided only that there is a single unitary idea in all the history of the universe. If, as is perhaps more probable, there is none, then God has more ideas than one in his mind. And

why not? But this *totum simul*, or *tota simul*, of temporal happenings becomes eternal, not by adding its component parts together, but by giving them their true worth in relation to the unchanging, eternal values.

And if we live, much more often than we realise, in a timeless world, we also live, much more often than we realise, in a timeless self. The "practical man" blames himself for absence of mind on the infrequent occasions when his mind is present; and the philosopher who has fallen into a well and afforded laughter to Thracian maidservants is occasionally reminded that we are tethered in a humiliating manner to a local and temporal environment. But it is the simple truth to say that for a great deal of our lives we are not so tethered; and this boundless freedom of thought is inexplicable on the hypothesis that we are merely creatures of time. The *strenua inertia* of our stupid civilisation has reduced our hours of real life to a minimum, so that Matthew Arnold complained that "we never once possess our souls before we die." It is unfortunate that those who never once possess their souls suppose that they know all about them—even, sometimes, that they do not exist, which would require a great deal of knowledge. Dr. Bosanquet has gibbeted a statement which, as he justly says, expresses exactly what he and all good Platonists are most concerned to deny. "We know what our souls are, we know the meaning of their identity, we know the sense in which they are distinct and independent in the world." In fact, we know none of these things. The soul is the wanderer of the metaphysical world. The "compound" which we usually call ourselves, has no knowledge, but only opinions. It constructs a world for itself out of imperfect data, and its self-knowledge is also an opinion constructed out of imperfect data. The true self, and the true world are to a great extent hidden from us. There are ways by which we may purge our vision, and at last find our real selves in a true world. I will not speak of the Platonic discipline to-day. But, for the time, we live in halfway-house

constructions, which are not real just because they are premature syntheses. A man who says that he knows what his soul is, has written himself down an ass. Dr. Bosanquet has shown that we usually construct our working hypothesis of the self by an abstraction—"by attending to it *par excellence*." In other words, we spin round our own centre till we are in danger of becoming our own circumference. He also suggests that "the apparent self-completeness of our bodies helps to confuse us, and that the "religious individualism" in which those of the older generation were usually brought up, has narrowed our conceptions of what the soul-life ought to be. I should add that our Western anthropolatry has a very mischievous influence, and not least upon contemporary philosophy. The Greeks were aware, as we are not, that "there are many things in the universe more divine than man." We find it far more difficult to get, in imagination, outside our own skins, than the thinkers of the East, and in consequence we seldom arrive at what India calls the Great Peace. We may then say with confidence that the self or soul of which some people would like to be assured that it will live for ever, does not exist even now, and that the hidden man of the heart, which thinks God's thoughts after him and is at home in the eternal world, can be found only by a discipline which the average man has never practised.

According to Plato, the soul in the ordinary sense, being composite, and even out of harmony with itself, cannot be the real soul. The real soul, as he says explicitly in the *Timæus*, is a divine spark enclosed in the complex personality of man. This doctrine has an evident kinship with Aristotle's *intellectus agens*, which is immortal, as opposed to the perishing receptive mind and memory. But Plato, if I understand him, was nearer to the Christian mystical doctrine of the "spark" or "soul-centre," which ought to be the unifying principle of the whole personality. The higher soul is thus potentially the *ego*, and

the "nature" of the soul is only realised when it is thus unified by its highest principle. The statement that there are two souls, a higher and a lower, is not to be taken literally. Plato's so-called dualisms are all of the same kind. There are higher or lower values to be realised, and there comes a point where roads diverge.

Plato's argument, in the tenth book of the *Republic*, for the immortality of the soul, has found a place in scholastic theology, but is supposed to have been discredited by Kant. I venture to think that his argument, that the soul can only be destroyed by an enemy (so to speak) *in pari materia*, is sound. Physical evils, including death, cannot touch the soul. And wickedness does not, in our experience, dissolve the soul, nor is wickedness specially apparent when the soul (if it perishes at death) would be approaching dissolution. Therefore there is no evil which can destroy the soul. It is easy to state this proof in a form which brings it under Kant's refutation of the ontological argument. But it is true to say that if the soul belongs to the world of spiritual values, it cannot be touched by the death of the body; and it is also unhappily true that evil, in the psychical world, is not merely a disruptive force.

Scholastic theology, developing perhaps some hints in Proclus, intercalated *ævum* between time and eternity. This is a thoroughly Platonic expedient, whether it can be traced to the ancient Platonists or not. Aquinas explains that "*ævum* is intermediate between time and eternity, participating in each; since, whilst time has a before and after and eternity has neither a before nor an after, *ævum* has not either a before or an after, though they can be conjoined to it." "Spiritual creatures, as regards their affections and intellections, in which there is succession, are measured by time; as regards their natural being, by *ævum*; as regards their vision of glory, they participate in eternity." It would seem to follow that finite beings can never be eternal in their own right; there is a quasi-durational element in their immortality. I do not know whether there is

anything valuable in this conception. It does not clear up any difficulties in my own mind.

It remains to consider the kindred questions of future retribution and reincarnation, incorrectly called metempsychosis. Plato was the first Greek to give us a detailed picture of future judgment, though, as he makes Cephalus say in the *Republic*, it had long haunted the popular imagination as a kind of nightmare, which became terrifying as death approached. Both in the *Republic* and the *Phædo*, punishment (in the proper sense of the word) is reserved for a few desperately wicked persons; for all others the discipline is purifying and remedial. In the *Phædo* there is a suggestion of the Orphic doctrine that eternal felicity consists in freedom from further reincarnations. The belief in reincarnation, not only in successive human lives but in the bodies of animals, was a primitive idea implying the recognition of our kinship with beasts and birds. Plato ethicises it by introducing the conception of a free choice of a new life, conditioned only by the soul's wisdom and experience. For him, reincarnation is neither a natural necessity nor a punishment, but a decision of the moral self. For Herodotus it had been a natural necessity, for Empedocles a punishment. Plato's theory is more like a doctrine of Karma than personal continuance. What passes into another life is the bare form of the ego, and its liabilities. No doubt, however, Plato pleads for real transmission of the life-principle; this is the meaning of his famous theory of *anamnesis*. The subject of racial memory, especially in beasts and birds, is one of great interest and importance, but it has little connexion with immortality in the Platonic sense. The whole question of reincarnation is most difficult, and I do not think I have anything worth saying about it. It is believed in by Asiatics generally; and may perhaps come to be a pious opinion among a large section of Europeans. Purgatory seems to be an alternative theodicy, but Platonists have managed to combine the two beliefs. There is no limit to the confusions of eschatology. The notion of

purification by suffering after death is obviously not an essential part of Platonism; but it seems to many to follow from what they believe of the divine justice and mercy. Without going so far as to suppose that all men will be saved at the last, it will seem to many that the Creator could not acquiesce in the final frustration of his thought for an individual life without allowing a fuller probation than was possible in this life. Dantesque visions of physical torment in the Platonists are obviously only myths, since the Greeks were unanimous in rejecting the resurrection of the body. The Platonic view of eternal reprobation is perhaps fairly summed up in a phrase which I used in my Gifford Lectures. "The soul of the bad man may be lost, but not the soul which would have been his if he had not been a bad man." There is an element in the soul—the spark or soul-centre above referred to—which is impeccable, and which never mingles with the world of sin and of decay.

To sum up. The Platonic doctrine of immortality rests on the *independence* of the spiritual world. The spiritual world is not a world of unrealised ideals, over against a real world of unspiritual fact. It is, on the contrary, the real world, of which we have a true though very incomplete knowledge, over against a world of common experience which, as a complete whole, is not real, since it is compacted out of miscellaneous data, not all on the same level, by the help of the imagination. There is no world corresponding to the world of our common experience. Nature makes abstractions for us, deciding what range of vibrations we are to see and hear, what things we are to notice and remember. It is the substantiation and continuance of this makeshift construction that we are sometimes childish enough to desire. What is real in it is the thought of God transmuted into vital law. The operation of these forces we study mainly in transverse sections, since we have forgotten most of the past and are ignorant of the future. But since the soul is a citizen of the eternal world, we can, if we will, "be

eternal in the midst of time," though our higher life is for most of us fitful, indistinct, and confused. It follows that salvation, for the Platonist, must be *deliverance* from a world of shadows and half-truths, *per tenebras in lucem*; and in this Platonism resembles Eastern rather than Western thought. But it differs profoundly from Indian philosophy in teaching that "all things that are Yonder are also Here." Spiritual things transcend sense, but that is because they already include it (John of the Cross). The whole content of the Creator's mind energises as vital law, and everything in the world—could we see it rightly—has its place in some teleological scheme. The later Platonists conveyed all the objects of sense, as well as all organic life, into the eternal world, though all are there revealed according to their true values. To despise the visible world is precisely to refuse to value it; it is to treat it as what it is not—dead and spiritless "matter." The main adventure and interest of the Platonist's life is the discovery of his own personality—the emergence of the butterfly out of the caterpillar. The process of discovery has never been better described than by St. Augustine. "I entered with thee for guide into the depths of my soul, and saw with a certain eye of the mind an unchanging light, shining above the eye of my mind and beyond my mind. It was higher than my mind because it made me. He who knows the truth knows that light, and he who knows that light knows eternity. Love knows that light. And as soon as I knew thee, thou didst take me up so that I saw that to exist on which I looked, *and that I who looked did not yet exist.*" What distinguishes the Platonist in his attitude to the world is his constant effort to see the eternal in the temporal, and, one might almost add, the temporal in the eternal, for he loves to trace all vestiges of truth, beauty, and goodness to their source; a great peace and detachment amid the storms which agitate the surface-waters of life; and a temperament which makes the intellect warm and the passions cold. Wordsworth, as Professor Stewart

justly observes, is the typical Platonist in our literature. Immortality, for such a one, is the air of his native country. And there we must leave him. It is possible to condemn Platonism as moonshine; but to those who desire a proof of human immortality I think we must say *Hic est aut nusquam quod quærimus.*

RULES OF THE ARISTOTELIAN SOCIETY.

Name.

I.—This Society shall be called "The Aristotelian Society for the Systematic Study of Philosophy," or, for a short title, "The Aristotelian Society."

Objects.

II.—The object of this Society shall be the systematic study of Philosophy; 1st, as to its historic development; 2nd, as to its methods and problems.

Constitution.

III.—This Society shall consist of a President, Vice-Presidents, a Treasurer, an Editor, a Librarian, a Secretary, and Members. Every Ex-President shall be a Vice-President. The business of the Society shall be managed by an Executive Committee consisting of the President, the Treasurer, the Editor, the Librarian, the Secretary, and six members elected in accordance with Rule VIII.

Subscription.

IV.—The annual subscription shall be one guinea, due at the first meeting in each session.

Admission of Members.

V.—Any person desirous of becoming a member of the Aristotelian Society shall apply to the Secretary or other officer of the Society, who shall lay the application before the Executive Committee, and the Executive Committee, if they think fit, shall admit the candidate to membership.

Corresponding Members.

VI.—Foreigners may be elected as corresponding members of the Society. They shall be nominated by the Executive Committee, and notice having been given at one ordinary meeting, their nomination shall be voted upon at the next meeting, when two-thirds of the votes cast shall be required for their election. Corresponding members shall not be liable to the annual subscription, and shall not vote.

Election of Officers.

VII.—The Committee shall nominate the President, the Treasurer, the Editor, the Librarian, and the Secretary for the ensuing session, and shall, at the Annual Meeting, submit the nominations for the approval of the Society.

Election of Committee.

VIII.—At the same meeting the six members to constitute with the officers the Executive Committee shall be elected by ballot. Nominations, which must be signed by two members of the Society, must reach the Secretary fourteen days before the meeting, and a ballotting paper shall be sent to all members. Members may return their ballotting papers by post before the meeting or hand them in at the meeting.

Should a vacancy occur at any other time, the Committee may co-opt a member to serve for the remainder of the Session.

Sessions and Meetings.

IX.—The ordinary meetings of the Society shall be on the first Monday in every month from November to June, unless otherwise ordered by the Committee. Such a course shall constitute a session. Special meetings may be ordered by resolution of the Society or shall be called by the President whenever requested in writing by four or more members.

Business of Sessions.

X.—At the last meeting in each session the Executive Committee shall report and the Treasurer shall make a financial statement, and present his accounts audited by two members appointed by the Society at a previous meeting.

Business of Meetings.

XI.—Except at the first meeting in each session, when the President or a Vice-President shall deliver an address, the study of Philosophy in both departments shall be pursued by means of discussion, so that every member may take an active part in the work of the Society.

Proceedings.

XII.—The Executive Committee are entrusted with the care of publishing or providing for the publication of a selection of the papers read each session before the Society.

Business Resolutions.

XIII.—No resolution affecting the general conduct of the Society and not already provided for by Rule XV shall be put unless notice has been given and the resolution read at the previous meeting, and unless a quorum of five members be present.

Visitors.

XIV.—Visitors may be introduced to the meetings by members.

Amendments.

XV.—Notices to amend these rules shall be in writing and must be signed by two members. Amendments must be announced at an ordinary meeting, and, notice having been given to all the members, they shall be voted upon at the next ordinary meeting, when they shall not be carried unless two-thirds of the votes cast are in their favour.

LIST OF OFFICERS FOR THE FORTY-FIRST SESSION, 1919–1920.

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